

THE EXCELLENCY
OF *T. H. R. B. E.*
THEOLOGY,

COMPAR'D WITH
NATURAL PHILOSOPHY,
(as both are Objects of Men's Study.)

Discours'd of
In a LETTER to a Friend.

By T. H. R. B. E.

Fellow of the *Royal Society*.

To which are annex'd
Some Occasional Thoughts about the
EXCELLENCY and GROUNDS
Of the
MECHANICAL HYPOTHESIS.

By the same Author.

*Felicitatem Philosophi quarunt; Theologi inveniunt;
soli Religiosi possunt.*

LONDON,

Printed by T. N. for Henry Herringman, at the
Anchor in the Lower Walk of the New Exchange. 1671.

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The PUBLISHER'S Ad-
vertisement to the Reader.

WHen I shall
have told the
Reader, that
the following
Discourse was written in the
year 1665, while the Authour,
to avoid the great Plague that
then rag'd in London, was
reduc'd with many others to
go into the Countrey, and fre-
quently to pass from place
to place, unaccompanied with
most of his Books; it will not,
I presume, be thought strange,
that in the mention of some
things taken from other Wri-
ters,

Advertisement of

ters, as his memory suggested them, he did not annex in the Margent the precise places that are refer'd to. And, upon the same score, it ought not to seem strange, that he has not mention'd some late Discoveries and Books that might have been pertinently taken notice of, and would well have accommodated some parts of his Discourse; since things that may thus seem to have been omitted, are of too recent a Date to have been known to him when He writ. But if it be demanded, why then a Discourse finished so long ago, did not come abroad much sooner? I must acquaint the Reader, That 'twas chiefly his real Concern for the welfare of the Study he seems to depreciate, that kept
these

the Publisher.

these Papers so long by him. For he resisted for several years the desires of Persons that have much power with him, and suppress'd the following Discourse, whilst he fear'd it might be misapply'd by some Enemies to Experimental Philosophy, that then made a noise against it, without suffering these Papers to come abroad, till the Addresses and Encomiums of many eminent Forreign Virtuosi, and their desire to be admitted into the Royal Society, had sufficiently manifested, how little its Reputation was prejudic'd, or like to be endanger'd, by the attempts of some envious or misinform'd Persons. And to this Reason must be added the Authors backwardness to venture abroad a Discourse of an

Advertisement, &c.

unusual Nature, on which account, among others, he declin'd to have his Name prefix'd to it ; though, now the Book is Printed, he finds cause to fear, that it will not be long conceal'd ; since he meets with some Marginal References to other Tracts of His, which (these Papers having long lain by him) he forgot to have been set down for private use, and which should not have been expos'd to publick view.

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ERRATA

IN the Author's Preface, p. 13. l. 7, 8. for *some*
what, r. *much*. In the Introduction, p. 2. l. 18.
 point thus, *else*; *our*. In the Book, p. 31. l. 17.
 for *Corpuscularium*, r. *Corpuscularian*. p. 75. l. 23
 for *he*, r. *we*. p. 114. l. 3. r. *Theology* for *Phila-*
sophy. p. 133. l. 10. r. *yet many of*. *ibid*. l. 19. r.
else do but. p. 171. l. ult. for *of*. r. *or*. p. 172. l.
 28. for *indeed*, r. *'twill perhaps be said that*.
 p. 201. l. 12. point thus, *Predecessors*, *did unani-*
mously teach.



The Author's

PREFACE.

I Am not so little acquainted with the Temper of this Age, and of the Persons that are likeliest to be Perusers of the following Tract, as not to foresee it to be probable enough, that Some will ask, For what Reason a Discourse of this Nature was written at all; and that Others will be displeas'd that it has been written by Me.

Those that would know, by what Inducements my Pen was engag'd on this Subject, may be in great part in-

A 4 form'd

The Author's Preface.

form'd by the Epistle it self, in divers places whereof, as especially about the Beginning, and at the Close, the Motives that invited me to put Pen to Paper are sufficiently express'd. And though several of those Things are peculiarly apply'd, and (if I may so speak) appropriated to the Person the Letter is address'd to ; yet that Undervaluation, I would dissuade *Him* from, of the Study of Things Sacred , is not His fault alone, but is grown so rise among many (otherwise Ingenious) Persons , especially Studiers of Physicks, that I wish the ensuing Discourse were much less seasonable than I fear it is.

But I doubt , that some Readers, who would not think

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think a Discourse of this Nature Needless or Useless, may yet not be pleased at its being written by One, whom they imagine the Acceptance his Endeavours have met with, ought to oblige to spend his whole Time in Cultivating that Natural Philosophy, which in this Letter he would perswade to quit the Precedency, they think it may well challenge, before all other sorts of Learning.

I am not unsensible of the favourable Reception that the Philosophical Papers I have hitherto ventured Abroad, have had the Happiness to receive from the Curious: But I hope, they will not be displeas'd, if I represent, that I am no Lecturer or Professor of Physicks, nor have ever engag'd

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engag'd my self by any Promise made to the Publick, to confine my self, never to write of any other Subject; nor is it Reasonable, that what I did or may write, to gratifie other mens Curiosity, should deprive me of mine own Liberty, and Confine me to *One* Subject; especially since there are divers Persons, for whom I have a great Esteem and Kindness, who think they have as much Right to solicit me for Composures of the Nature of this, that They will now have to go abroad, as the *Virtuosi* have to exact of me Physiological Pieces. And though I be not ignorant, that (in particular) the following Discourse, which seems to depreciate the Study of Nature, may at first sight

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might appear somewhat improper for a Person, that has purposely written to show the Excellence and Usefulness of it; yet I confess, that, upon a more Attentive Consideration of the Matter, I cannot Reject, no, nor Resist, Their Reasons, who are of a quite differing Judgment.

And 1. My Condition, and my being a Secular Person (as they speak) are look'd upon as Circumstances that may advantage an Author that is to write upon such a Subject as I have handled. I need not tell you, that as to Religious Books in general, it has been observ'd, that those penn'd by Lay-men, and especially Gentlemen, have (*ceteris paribus*) been better entertain'd, and more effectual

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Equal than those of Ecclesiasticks : And indeed 'tis no great wonder, that Exhortations to Piety, and Dissuasions from Vice, and from the Lusts and Vanities of the World, should be the more prevalent for being press'd by Those, who have, and yet decline, the Opportunities to enjoy plentifully Themselves the pleasures They dissuade Others from. And (to come yet closer to our present purpose) though I will not venture to say with an excellent Divine, That what ever comes out of the Pulpit, does with many pass but for *the foolishness of Preaching* ; yet it cannot well be deni'd, but that if all other Circumstances be equal, He is the fittest to commend Divinity, whose
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Profession It is not ; and
That it will somewhat add
to the Reputation of almost
any Study, and consequently
to that of things Divine,
That 'tis prais'd and preferr'd
by Those, whose Condition
and Course of Life exem-
pting them from being of any
particular Calling in the
Common-wealth of Learn-
ing, frees Them from the
usual Temptations to Partia-
lity to this or that sort of Stu-
dy, which Others may be
engag'd to magnifie, because
'tis their Trade or their Inter-
est, or because 'tis Expected
from them ; whereas these
Gentlemen are oblig'd to
commend it, onely because
they really Love and Value
it.

But there is another thing
that

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that seems to make it yet more fit, that a Treatise on such a Subject should be Penn'd by the Authour of This: For profess'd Divines are suppos'd to be busied about Studies, that even by their being of an Higher, are confess'd to be of Another Nature, than those that treat of things Corporeal. And since it may be observ'd, that there is scarce any sort of Learned men, that is more apt to undervalue those that are vers'd onely in other parts of Knowledge, than many of our Modern Naturalists, (who are conscious of the Excellency of the Science they Cultivate,) 'tis much to be fear'd, that what would be said of the Preeminences of Divinity above Physiology
by

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by Preachers (in whom the Study of the Latter is thought either but a Preparatory thing, or an Excursion) would be look'd upon as the Decision of an Incompetent, as well as Interrested, Judge; and their undervaluations of the Advantages of the study of the Creatures, would be (as their depreciating the Enjoyment of the Creatures too often is,) thought, to proceed but from their not having had sufficient opportunities to relish the pleasures of them. But these Prejudices will not lie against a Person, who has made the Indagation of Nature somewhat more than a *Parergon*, and having by a not-lazie nor short Enquiry manifested, how much He loves and can relish the De-
light

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light It affords, has had the good Fortune to make some Discoveries in it, and the Honour to have them Publickly, and but too Complementally, taken notice of by the *Virtuosi*. And it may be not Impertinent to add, that those who make Natural Philosophy their *Mistress*, will probably be the less offended to find her in this Tract represented, if not as an *Handmaid* to Divinity, yet as a Lady of a lower Rank; because the Inferiority of the Study of Nature is maintain'd by a Person, who, even whilst he asserts it, continues (if not a Passionate) an Assiduous Courter of Nature: So that, as far as his Example can reach, it may show, that *as on* the one side a man need not be

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be acquainted with, or unfit to relish, the Lessons taught us in the Book of the Creatures, to think them less Excellent than those, that may be learned in the Book of the Scriptures; so on the other side, the Preference of this last Book is very consistent with an high Esteem and an Assiduous Study of the first.

And if any should here object, that there are some Passages, (which I hope are but very few) that seem a little too unfavourable to the Study of Natural things; I might alledge for my excuse the great difficulty that there must be in comparing two sorts of Studies, both of which a man much esteems, so

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to behave ones self, as to split a hair between them, and never offend either of them: But I will rather represent, that in such kind of Discourses as the ensuing, it may justly be hop'd, that equitable Readers will consider, not onely what is said, but on what occasion, and with what design 'tis delivered. Now 'tis plain by the *Series* of the following Discourse, that the *Physeophilus*, whom it most relates to, was by me look'd upon as a Person, both very partial to the study of Nature, and somewhat prejudic'd against that of the Scripture; so that I was not always to treat with him, as with an indifferent man, but, according to the Advice, given

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ven in such cases by the Wise,
I was (to use *Aristotle's* ex-
pression) to bend the crook-
ed stick the contrary way, in
order to the bringing it to be
straight, and to depreciate
the study of Nature some-
what beneath its true value,
to reduce a great Over-va-
luer to a just Estimate of it.
And to gain the more upon
Him, I allow'd my self now
and then to make use of the
contempt he had of the *Pe-
ripatetick* and *Vulgar Philo-
sophy*, and in some passages
to speak of them more sligh-
tingly, than my usual Tem-
per permits, and than I would
be forward to do on another
occasion; that, by such a
Complaisance for his Opini-
ons, I might have Rises to

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Argue with him from them.

But to return to the Motives that were alledg'd to induce me to the Publication of these Papers, though I have not nam'd them all, yet all of them together would scarce have prov'd effectual, if they had not been made more prevalent by the just Indignation I conceived, to see even Inquisitive Men depreciate that kind of Knowledge, which does the most Elevate, as well as the most Bless, Mankind, and look upon the Noblest and Wisest Employments of the Understanding, as Signs of weakness in it.

'Tis not that I expect, that whatever can be said, and much less what I have had occasion to say Here, will make
Pro-

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Profelytes of those that are resolved against the being made so, and had rather deny themselves the Excellentest kinds of Knowledge, than allow that there can be any more Excellent, than what they think themselves Masters of: But I despair not, that what is here represented, may serve to fortifie in a high Esteem of Divine Truths those that have already a just Veneration for them, and preserve Others from being seduc'd by Injurious, though sometimes Witty, Insinuations, to undervalue that kind of Knowledge, that is as well the most Excellent in it self, as the most Conducive to Man's Happiness. And for this Reason I am the less displeas'd

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pleas'd to see, that the following Letter is swell'd to a Bulk far greater than its being but a Letter promises, and then I first intended. For I confess, that when the Occasion hapned that made me put Pen to Paper, as I chanc'd to be in a very unsettled Condition (which I fear has had too much influence on what I have written,) so I did not design the insisting near so long upon my Subject as I have done; but new things springing up (if I may so speak) under my Pen, I was content to allow them room in my Paper, because writing as well for my own satisfaction, as for that of my Friend, I thought it would not be useless to lay before my

my

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my own Eyes, as well as His, those Considerations that seem'd proper to justify to My self as well as to Him, the Preference I gave Divine Truths (before Physiological ones) and to confirm my self in the Esteem I had for them. And though I freely confess, that the following Discourse doth not consist of nothing but Ratiocinations, and consequently is not altogether of an Uniform Contexture ; yet that will, I hope, be thought no more than was fit in a Discourse, design'd not onely to Convince, but to Perswade: Which if it prove so happy as to do, as I hope the ~~Reader~~ ~~will have no cause to~~ regret

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regret the trouble of Reading it, so I shall not repent that of Writing it.

The
hope, he thought no more
than was fit in a Discom-
fort, not only to Con-
vince, but to Persuade:
Which it is prove to happy
as to do, as I hope the Ver-
ty will have and can be
regret



THE
INTRODUCTION.

SIR,

I Hop'd you had known me better,
than to doubt in good earnest,
how I relish'd the Discourse your
Learned Friend entertain'd us
with yester-night. And I am the
more troubled at your Question, because
your way of inquiring, how much your
Friends Discourse obtain'd of my Ap-
probation, gives me cause to fear, that you
vouchsafe it more of yours then I could
wish it. But before I can safely offer you
my sense of the Discourses, about which
you desire to know it, I must put you in
mind, that they were not all upon one
Subject, nor of the same Nature: And
I am enough his Servant to acknow-
ledge, without the least reluctancy,
that he is wont to shew a great deal of
wit, when he speaks like a Naturalist,
onely of things purely Physical; and
when

when he is in the right, seldom wrongs
a good cause by his way of managing it.
But as for those passages, wherein he
gave himself the liberty of disparaging
the learned Dr. N. onely because that
Do^r cultivates Theological as well as
Physical Studies, and does both often-
times read Books of Devotion, and some-
times write them; I am not so much a
Courtier, as to pretend that I liked them.
'Tis true, he did not deny the Do^r to
be a learned and a witty Man, as indeed
the wise providence of God has so or-
dered it, That to stop the bold mouthes of
some, who would be easily tempted to ima-
gine, and more easily to give out, that
none are Philosophers, but such as, like
themselves, desire to be nothing else.
Our Nation is happy in several men,
who are as eminent for Humane, as stu-
dious of Divine Learning; and as great
a veneration as they pay to Moses and
St. Paul, are as well vers'd in the Do-
ctrine of Aristotle, and of Euclid; nay,
of Epicurus and Des Cartes too, as
those that care not to study any thing else.
But though for this reason Mr. N. had
not the confidence to despise the Do^r,
and some of his Resemblers, whom he
took occasion to mention; yet he too
plainly

plainly disclos'd himself to be one of those, who though they will not deny, but that some, who own a value for Theology, are men of parts; yet they talk, as if such persons were so, in spite of their being Religiously given; That being, in their opinion, such a blemish, that a man must have very great Abilities otherwise, to make amends for the disadvantage of valuing Sacred Studies, and surmount the disparagement it procures him. Wherefore since this disdainful humour begins to spread much more than I could wish it did among differing sorts of men, among whom I should be glad not to find any Naturalists; and since the Question you ask'd me, and the esteem you have for your Friend, makes me fear you may look on it with very favourable eyes: I shall not decline the opportunity you put into my hands of giving you, together with a profession of my dislike of this practice, some of my Reasons for that dislike; and the rather, because I may do it without too much exceeding the limits of an Epistle, or those which the haste, wherewith I must write this, does prescribe to me. For your Friend does not oppose, but only undervalue Theology; and professing to

believe the Scriptures (which I so far credit, as to think he believes himself when he says so) we agree upon the principles: So that I am not to dispute with him as against an Atheist, that denies the Authour of Nature, but onely against a Naturalist, that over-values the study of it. And the Truths of Theology are things, which I need not bring Arguments for, but am allowed to draw Arguments from them.

But though, as I just now intimated, I design brevity; yet for fear the fruitfulness and importance of my Subject should suggest things enough to me to make some little method, requisite to keep them from appearing confused; I shall divide the following Epistle into two distinct parts. In the former of which I shall offer you the chief positive Considerations, by which I would represent to you the study of Divinity, as preferable to that of Physicks: And in the second part I shall consider the Allegations, that I foresee your Friend may interpose: in favour of Natural Philosophy. From which distribution you will easily gather, that the Motives on the one hand, and the Objections on the other will challenge to themselves

selves distinct sections in the re-
spective parts whereto they belong.
So that of the Order of the particulars
you will meet with, I shall not need to
trouble you with any further Ac-
count.

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THE EXCELLENCY
OF
THEOLOGY:

OR,

*The Preeminence of the Study of
Divinity, above that of Na-
tural Philosophy.*

THE FIRST PART.



O address my self then,
without any farther
Circumstance or Pre-
amble, to the things
themselves, that I
mainly intend in this
Discourse, I consider in the General,
That as there are scarce any Motives
accounted fitter to engage a Rational
man in a study, than *That* the Sub-

ject is Noble, *That* 'tis his Duty to apply himself to it, and *That* his Proficiency in it will bring him great Advantages; So there is not any of these three Inducements, that does not concur in a very plentiful measure to recommend to us the Study of Theological Truths.

THE FIRST SECTION.

AND first, The Excellency and Sublimity of the Object we are invited to contemplate, is such, that none that does truly acknowledge a Deity can deny, but that there is no Speculation, whose Object is comparable in point of Nobleness, to the Nature and Attributes of God. The Souls of inquisitive men are commonly so curious, to learn the Nature and Condition of *Spirits*, as that the over-greedy desire to discover so much as *That there are other Spiritual Substances besides the Souls of Men*, has prevail'd with too many to try forbidden ways of attaining satisfaction; and many have chosen rather to venture the putting themselves within

within the power of Dæmons, than
 remain ignorant whether or no there
 are any such Beings: As I have learn-
 ed by the private acknowledgments
 made me of such unhappy (though
 not unsuccessful) Attempts, by di-
 vers learned men (both of other Pro-
 fessions, and that of Physick,) who
 themselves made them in differing
 places, and were persons neither Ti-
 merous nor Superstitious: (But this
 onely upon the By.) And certainly
 that man must have as Wrong as
 Mean a Notion of the Deity, and must
 but very little consider the Nature
 and Attributes of that infinitely per-
 fect Being, and as little the Nature and
 infirmities of Man, who can imagine
 the Divine Perfections to be Sub-
 jects, whose investigation a man may
 (ineulpably) despise, or be so much
 as fully sufficient for. Not onely the
 Scripture tells us, That his Greatness Pf. 145.
is incomprehensible, and his wisdom is
infernible; That he humbles himself Pf. 147.5.
Pf. 113.6.
to look into (or upon) the Heavens and
the Earths; and, That not onely this
 or that man, but all the Nations of the Isa. 40.
World are, in comparison of him, but
like the small Drop of a Bucket, or the
smaller

smaller Dust of a Ballance: But even the Heathen Philosopher, who wrote that eloquent Book *De Mundo*, ascrib'd to *Aristotle* in his riper years, speaks of the Power, and Wisdom, and Amiableness of God, in terms little less lofty, though necessarily interiour to so infinitely Sublime a Subject; which they that think they can, especially without Revelation, sufficiently understand, do very little understand themselves.

Rom. j.
19.

But perhaps your Friend will object, That to the knowledge of God there needs no other then Natural Theology; and I readily confess, being warranted by an Apostle, that the *γνωσις τοῦ Θεοῦ*, was not unknown to the Heathen Philosophers; and that so much knowledge of God is attainable by the light of Nature, duly employ'd, as to encourage men to exercise themselves more than most of them do in that noblest of Studies, and render their being no Proficients in it, injurious to themselves as well as to their Maker. But notwithstanding this, as God knows Himself infinitely better then purblind Man knows Him, so the Informations He is pleased

pleased to vouchsafe us, touching His own Nature and Attributes, are exceedingly preferable to any account, that we can give our selves of Him, without Him. And methinks, the differing Prospects we may have of Heaven, may not ill adumbrate to us the differing Discoveries that may be made of the Attributes of its Maker. For *as*, though a man may with his naked eye see Heaven to be a very glorious Object, enobled with radiant Stars of several sorts; yet when his eye is assisted with a good Telescope, he can not onely discover a number of Stars (Fix'd and Wandring) which his naked eye would never have shown him; but those Planets which he could see before, will appear to him much bigger, and more distinct: *So*, although bare Reason well improv'd will suffice to make a man behold many glorious Attributes in the Deity; yet the same Reason, when assisted by Revelation, may enable a man to discover far more Excellencies in God, and perceive them, he contemplated before, far greater and more distinctly. And to shew how much a dim Eye,
illu-

illuminated by the Scriptures, is able to discover of the Divine Perfections, and how unobvious they are to the most piercing Philosophical Eyes, that enjoy but the dim light of Nature; we need but consider, how much more suitable Conceptions and Expressions concerning God are to be met with in the Writings of those Fishermen and others, that penn'd the New Testament, and those illiterate Christians that received it, than amongst the most Civiliz'd Nations of the World (such as anciently the *Greeks* and *Romans*, and now the *Chinese* and *East-Indians*) and among the eminentest of the Wise-men and Philosophers themselves, (as *Aristotle*, *Homer*, *Hesiod*, *Epicurus*, and others.)

Besides that the Book of Scripture discloses to us much *more* of the Attributes of God, than the Book of Nature; there is another Object of our Study, for which we must be *entirely* beholding to Theology: For though we may know something of the *Nature* of God by the Light of Reason, yet we must owe the knowledge of His *Will*, or *Positive Laws*, to His own Revelation. And we may
 ghes

ghess, how curious great Princes and wise Men have been to inform themselves of the Constitutions established by wise and eminent Legislators; *partly* by the frequent Travels of the Ancient Sages and Philosophers into Forreign Countries, to observe their Laws and Government, as well as bring home their Learning; and *partly* by those Royal and Sumptuous Expences, at which that Great and Learned Monarch *Ptolomeus Philadelphus* stuck not to procure an Authentick Copy of the Law of *Moses*, whom he considered but as an eminent Legislator. But certainly That, and other Laws recorded in the Bible, cannot but appear more noble and worthy Objects of Curiosity to us Christians, who know them to proceed from an Omniscient Deity, who being the Authour of Mankind, as well as of the rest of the Universe, cannot but have a far perfecter knowledge of the Nature of Man, than any other of the Law-givers, or all of them put together can be conceived to have had.

But there is a farther Discovery of Divine Matters, wherewith we are also

also gratified by Theology: For besides what the Scripture teaches us of the Nature and the Will of God, it contains divers Historical Accounts (if I may so call them) of His Thoughts and Actions. The Great *Alexander* thought himself nobly employ'd, when he read of the *Grecian* Actions in *Homer's* Verses; and, To know the Sentiments of great and wise Persons, upon particular occasions, is a curiosity so laudable, and so worthy of an Inquisitive Soul, that the Southern Queen has been more prais'd than admir'd, for coming from the remoter parts of the Earth, to hear the Wisdom of *Solomon*. Now the Scripture does in many places give our Curiosity a nobler Employment, and thereby a higher Satisfaction, than the King of *Macedon*, or the Queen of *Sheba* could enjoy; for in many places it does, with great clearness and ingenuity, give us accounts of what God Himself hath declar'd of *His own Thoughts*, of divers particular Persons and Things, and relates, what He that knows and commands all things, was pleas'd to say & do upon particular Occasions. Of this sort of Passages are the things

things recorded to have been said by God to *Noah*, about the sinful Worlds Genes. vj. ruine, and that *First Man's* preservation; and to *Moses* in the case of the Numb. Daughters of *Zelophehad*. And of xxvij. 7. this sort are the Conferences, mentioned to have pass'd betwixt God and *Abimelech*, concerning *Abraham's* Genes. Wife; betwixt God and *Abraham* xx. touching the destruction of *Sodom*; Genes. betwixt God and *Solomon*, about that xvij. Kings happy choice; betwixt God i Kings and *Fonah*, about the Fate of the iiij. greatest City of the World: And above all these, those two strange and matchless Passages, the one in the first Book of *Kings*, touching the i Kings seducing Spirit that undertook to se- xxij. from ver. 19. to ver. 24. duce *Ahab's* Prophets; and the other, that yet more wonderful Relation of what pass'd betwixt God and Satan, Job j. 6, 7, &c. wherein the Deity vouchsafes not Job ij. 3. onely to Praise, but (if I may so speak with reverence) to Glory in a Mortal. And the being admitted to the knowledge of these Transactions of another World (if I may so call them) wherein God has been pleased to disclose himself so very much, is an advantage afforded us by the Scripture

pture, of so noble a Nature, and so unattainable by the utmost improvement we our selves can make of our own Reason, that, did the Scripture contain nothing else that were very Considerable, yet that Book would highly deserve our Curiosity and Gratitude.

And on this occasion, I must by no means leave unobserv'd another Advantage that we have from some Discourses made us in the Bible; since it too highly concerns us, not to be a very Great one; and it is, That the Scripture declares to us the Judgment, that God is pleas'd to make of some particular Men, upon the Estimate of their Life and Deportment. For though Reason alone, and the Grounds of Religion in general, may satisfy us in some measure, that God is Good and Merciful, and therefore *'tis likely he may* Pardon the sins and frailties of Men, and accept of their Imperfect Services; yet, besides that we do not know, whether *He will* Pardon, unless we have His Promise of it; besides this (I say) though by vertue of general Revelation, such as is pretended to in divers Religions,

Religions, we may be assured, that God will accept, forgive, and reward those that *sincerely obey him, and perform the Conditions* of the Covenant, whether it be Express, or Implicite, that he vouchsafes to make with them; yet since 'tis *He* that is the Judge of the Performance of the Conditions, and of the sincerity of the Person; and since *He* is Omniscient, and a *Καρδιωγιωσκης*, and so may know more Ill of us, than even we know of our selves; a concerned *Conscience* may rationally doubt, whether in *Gods Estimate* any particular man was so sincere as to be accepted. But when *He Himself* is pleas'd to give *Elogiums* (if I may with due respect so style them) to *David, Job, Noah, Daniel, &c.* whilst they were alive, and to others after they were dead, (and consequently having finished their Course, were pass'd into an Irreversible state) we may learn with Comfort, both that the Performance of such an Obedience as *God will accept*, is a thing really *Practicable by Men*; and that even great sins and misdemeanors are not (if seasonably repented of) certain evidences, that a

See Heb.
v. 9.

Psal. ciiij.
17, 18,

Acts j. 21.

1 Joh. iij.
20.

man shall never be Happy in the future Life. And it seems to be for such an use of consolation to Frailmen (but not at all to encourage Licentious ones) that the Lapses of holy Persons are so frequently recorded in the Scriptures. And bating those Divine Writings, I know no Books in the world, nor all of them put together, that can give a considering Christian, who has due apprehensions of the Inexpressible Happiness or Misery of an Immortal state in Heaven or in Hell, so great and well grounded a Consolation, as may be deriv'd from three or four lines in St. John's *Apocalypse*, where he says, *That he saw in Heaven a great multitude, not to be numbered, of all Nations, and Tribes, and People, and Tongues, standing before the Throne, and before the Lamb, clothed in white Robes, with Palms (the Ensigns of Victory) in their hands, and the Praises of God and of the Lamb in their mouths.* For from thence we may learn, that Heaven is not reserv'd onely for Prophets, and Apostles, and Martyrs, and such extraordinary Persons, whose Sanctity the Church admires, but that through Gods goodness,

Revel.
xij. 9.

ness, multitudes of his more Imperfect Servants have access thither.

Though the Infinite Perfections and Prerogatives of the Deity be such, that Theology it self can no more than Philosophy afford us *another Object* for our Studies, any thing near so Sublime and Excellent, as what it discloses to us *of God*; yet Divinity favours us with some other Discoveries, namely, about Angels, the Universe, and our own Souls, which though they must needs be inferior to the knowledge of God Himself, are, for the nobleness of their Objects, or for their Importance, highly preferable to any that Natural Philosophy has been able to afford its Votaries.

But before I proceed to name any more particulars, disclos'd to us by Revelation, 'twill be requisite, for the prevention or removal of a Prejudice, to mind you, that we should not make our Estimates of the worth of the things we owe to Revelation, by the Impressions they are wont now to make upon *us* Christians, who learned divers of them in our Catechisms, and perhaps have several times met

with most of the *Rest* in Sermons, or Theological Books. For 'tis not to be admir'd, that we should not be strongly affected at the mention of those Truths, which (how valuable soever in themselves) were for the most part taught us when we were either Children, or too Youthful to discern and prize their Excellency and Importance. So that though afterwards they were presented to our riper understanding, yet their being by that time become familiar, and our not remembering that we ignor'd them, kept them from making any vigorous Impressions on *Us*. Whereas if the same things had been (with Circumstances evincing their Truth) discover'd to some Heathen Philosopher, or other vertuous and inquisitive Man, who valu'd important Truths, and had nothing but his own Reason to attain them with, he would questionless have receiv'd them with wonder and joy. Which to induce us to suppose we have sundry Instances, both in the Records of the Primitive Times, and in the recent Relations of the Conversion of men to Christianity among the People of *China, Fa-*
pan,

pan, and other Literate Nations. For though bare Reason cannot discover these Truths, yet when Revelation has once sufficiently propos'd them to *Her*, she can readily embrace, and highly value divers of them; which being here intimated once for all, I now advance to name some of the Revelations themselves.

And first, as for Angels, I will not now question, whether bare Reason can arrive at so much as to assure us, *That there are* such Beings in *Rerum Naturâ*. For though Reason may assure, that their Existence is not Impossible, and perhaps too not improbable; yet I doubt, whether 'twere to meer Ratiocination, or clear Experience, or any thing else but Revelation, convey'd to them by imperfect Tradition, that those Heathen Philosophers, who believ'd that there were separate Spirits other than Humane, ow'd that perswasion. And particularly as to *Good Angels*, I doubt, whether those Antient Sages had any cogent Reasons, or any convincing Historical Proofs, or, in short, any one unquestionable Evidence of any kind, so far s^tie a wary person so much as of

Matth. xxvj. 53. the *being* (much less to give a farther
 Dan. vij. 10. account) of those Excellent Spirits.
 Joh. j. 3. Whereas Theology is enabled by the
 Heb. j. 7. Scripture to inform us, that not onely
 Luke xx. 35, 36. there are such Spirits, but a vast mul-
 Col. j. 16. titude of them; That they were made
 Matth. xxiv. 36. by God and Christ, and are Immortal,
 Mark xij. 32. and propagate not their *Species*; and
 Matth. xvij. 10. that these Spirits have their chief Re-
 Isa. vj. 2, 3. sidence in Heaven, and enjoy the Vi-
 Matth. vj. 10. sion of God, whom they constantly
 2 Sam. xiv. 20. praise, and punctually obey, without
 Mark xij. 32. having sinn'd against him; That also
 2 King. xix. 35. these Good Angels are very Intelli-
 1 Thess. iv. 16. gent Beings, and of so great power,
 Jude ix. Dan. x. 33, 34. that One of them was able in a night
 Col. j. 16. to destroy a vast Army; That they
 Revel. xij. 7. have Degrees among themselves, are
 Acts xij. 7, 8, 9, 10. Enemies to the Devils, and fight
 Dan. x. 23. against them; That they can assume
 Acts xij. 11. Bodies shap'd like ours, and yet dis-
 2 Kings vj. 17. appear in a trice; That they are some-
 Luke xlv. 4. times employ'd about Humane affairs,
 and that not onely for the welfare of
 Empires and Kingdomes, but to pro-
 tect and rescue single Good men.
 And though they are wont to appear
 in a dazling Splendor, and an asto-
 nishing Majesty, yet they are All of
 them *ministring Spirits*, employ'd for
 the

the good of the designed Heirs of Salvation. And they do not onely refuse mens Adoration, and admonish them to pay it unto God; but, as they are in a sense made by Jesus Christ, who was true Man as well as God; so they do not onely worship him, and call him simply, as his own Followers were wont to do, *The Lord*, but stile themselves *Fellow servants* to his Disciples.

And as for the other Angels, though the Gentiles, as well Philosophers as others, were commonly so far mistaken about them, as to adore them for true Gods, and yet many of them to doubt whether they were immortal; the Scripture informs us, that they are not Self-originated, but created Brings; *That* however a great part of Mankind worships them, they are wicked and impure Spirits, Enemies to Mankind, and Seducers of our first Parents to their Ruine; *That* though they beget and promote confusion among men, yet they have some Order among themselves, as having one Chief, or Leader; *That* they are evil Spirits, not by Nature, but Apostacy; *That* their power is

Jude.
xij. 8.
Heb. j. 14.
Revel.
xix. 10.
Revel.
xxij. 9.

Matth.
xxviii. 6.
Revel.
xix. 10.

Joh. j. 3.
Coloss. 1.
16.
Matth.
xij. 7.
Luke iv.
31.
Job. viii.
34.
1 Per.
v. 8.
2 Cor.
xj. 3.
Revel.
xij. 9.
Revel.
xij. 7.
Matth.
xxv. 41.
1 Joh.
lii. 8.

Jude 6.
Mark v.
9, 10, 13.

Jam. iv. 7.
1 Pet. v. 9.

1 Cor. i.
v. 3.
Matth.
xxv. 41.
Jam. ij.
19.

3 Pet.
ij. 4.
Jude 6.
13.
Matth.
xxv. 41.

very limited, insomuch that a Legion of them cannot invade so contemptible a thing as a Herd of Swine, without particular leave from God; *That* not onely Good Angels, but Good Men, may, by resisting them, put them to flight, and the sincere Christians that worsted them here, will be among those that shall judge them hereafter; *That* their being immortal, will make their misery so too; *That* they do themselves believe and tremble at those Truths, they would persuade men to reject; and *That* they are so far from being able to confer that Happiness, which their Worshipers expect from them, that themselves are wretched creatures, *reserv'd in chains of darkness to the judgment of the great Day*; at which they shall be doom'd to suffer everlasting torments, in the company of those wicked men that they shall have prevail'd on.

We may farther consider, That as to things Corporeal themselves, which the Naturalist challenges as his peculiar Theme, we may name particulars, and those of the most comprehensive nature, and greatest Importance,

portance, whose knowledge the Naturalist must owe to Theology. Of which Truths I shall content my self to give a few instances in the *World* it self, or the universal Aggregate of things Corporeal; *that* being look'd upon as the noblest and chiefeſt Object, that the *Phyſicks* afford us to contemplate.

And firſt, Thoſe that admit the Truths reveal'd by Theology, do generally allow, that God is not onely the Author, but Creator of the World. I am not ignorant of what *Anaxagoras* taught, of what he call'd *νός* — (and *Tully* mentions) in the production of the *World*; and that what many other *Grecians* afterwards taught of the *Worlds* Eternity, is peculiarly due to *Aristotle*, who does little leſs than brag, that all the Philoſophers that preceded him were of another mind. Nor will I here examine (which I elſe-where do) whether, and how far by Arguments meerly *Phyſical*, the Creation of the *World* may be evinc'd. But whether or no meer Natural Reason can reach ſo ſublime a Truth; yet it ſeems not that it *did* actually, where it was not excited by
Reve-

Revelation-Discovery. For though many of the antient Philosophers believ'd the *World* to have had a Beginning, yet they all took it for granted, that *Matter* had none; nor does any of them, that I know of, seem to have so much as imagin'd, that any Substance could be produced out of Nothing. Those that ascribe much more to God than *Aristotle*, make Him to have given *Form* onely, not *Matter*, to the *World*, and to have but contriv'd the pre-existent *Matter* into this orderly System we call the *Universe*.

Next, whereas very many of the Philosophers that succeeded *Aristotle*, suppose the *World* to have been *Eternal*; and those that believ'd it to have been produc'd, had not the confidence to pretend to the knowing how old it was; unless it were some extravagant ambitious People, such as those fabulous *Chaldeans*, whose fond account reach'd up to 40000 or 50000 years: Theology teaches us, that the *World* is very far from being so old by 30 or 40 thousand years as they, and by very many Ages, as divers others have presum'd:

sum'd ; and does, from the Scripture, give us such an account of the age of the World, that it has set us certain Limits, within which so long a Duration may be bounded, without mistaking in our Reckoning. Whereas Philosophy leaves us to the vastness of Indeterminate Duration, without any certain Limits at all.

The Time likewise, and the Order, and divers other Circumstances of the Manner, wherein the Fabrick of the World was compleated, we owe to Revelation ; bare Reason being evidently unable to inform us of *Particulars* that preceded the Origine of the first Man; and though I do not think Religion so much concern'd, as many do, in their Opinion and Practice, that would deduce particular Theorems of Natural Philosophy from this or that Expression of a Book, that seems rather design'd to instruct us about Spiritual than Corporeal things. I see no just reason to embrace their Opinion, that would so turn the two first Chapters of *Genesis* into an Allegory, as to overthrow the Literal and Historical sense of them. And though I take the Scripture to be

be mainly design'd to teach us nobler and better Truths, than those of Philosophy ; yet I am not forward to condemn those, who think the beginning of *Genesis* contains divers particulars, in reference to the Origine of things, which though not *unwarily*, or *alone* to be urg'd in Physicks, may yet afford very considerable *Hints* to an attentive and inquisitive Peruser.

And as for the Duration of the World, which was by the old Philosophers held to be Interminable, and of which the *Stoicks* Opinion, that the World shall be destroyed by fire (which they held from the *Jews*) was Physically precarious ; Theology teaches us expressly from Divine Revelation, that the present *course of Nature* shall not last always, but that one Day *this world* (or at least this *Vortex* of ours) shall either be Abolished by Annihilation, or (which seems far more probable) be Innovated, and, as it were, Transfigur'd, and that by the Intervention of that Fire, which shall dissolve and destroy the present frame of Nature : So that either way, the present state of things (as well Naturall as Political)

TeoX
Tis yert-
ow.
Jam. iij.
6.

a Per. iij.
p. 30, 13.

cal) shall have an end,

And as Theology affords us these Informations about the Creatures in general; so touching the chiefeft and nobleft of the visible ones, *Men*, Revelation discovers very plainly divers very important things, where Reason must needs be in the dark.

And first, touching the Body of Man; The *Epicureans* attributed its Original, as that of all things else, to the Casual Concourse of Atoms; and the *Stoicks* absurdly and injuriously enough (but much more pardonably than their follower herein, Mr. *Hobbs*) would have Men to spring up like Mushrooms out of the ground; and whereas other Philosophers maintain conceits about it, too wild to be here recited; the Book of *Genesis* assures us, that the Body of Man was first form'd by God in a peculiar manner, of a Terrestrial Matter; and 'tis there described, as having been perfected before the Soul was united to it. And as Theology thus teaches us, how the Body of Man had its first beginning; so it likewise assures us, what shall become of the Body after death; though bare Natural Reason will scarce be pre-

Gen.ij.7.

AGs
xxiv. 15.

pretended to reach to so abstruse and difficult an Article as that of a Resurrection, which, when propos'd by *St. Paul*, produc'd among the *Athenian* Philosophers nothing else but wonder or laughter.

Acts
xvij. 20,
32.

Not to mention, that Theology teaches us divers other things about the Origine and Condition of Mens Bodies; as, *That* all Mankind is the Off-spring of One Man and one Woman; *That* the first Woman was not made of the same Matter, nor after the same Manner as the first Man, but was afterwards taken from his side; *That* both *Adam* and *Eve* were not, as many *Epicureans* and other Philosophers fanci'd that the first men were, first Infants; whence they did, as we do, grow by degrees to be mature and compleat Humane Persons, but were made so all at once; and, *That* hereafter, as all mens Bodies shall rise again, so they shall all (or at least all those of the just,) be kept from ever dying a second time.

Gen. ij.
Acts
xvij. 26.

Gen. ij.
21, 22.

Acts
xxv. 15.
Luke xx.
35, 36.

And as for the Humane Soul, though I willingly grant, that much may be deduc'd from the Light of Reason only, touching its Existence,

Pro-

Properties, and Duration; yet Divine Revelation teaches it us with more clearness, and with greater Authority; as, sure, he that made our Souls, and upholds them, can best know what they are, and how long he will have them last. And as the Scripture expressly teaches us, that the Rational Soul is distinct from the Body, as not being to be destroy'd by those very Enemies that kill the Body; so about the Origine of this Immortal Soul (about which Philosophers can give us but wide and precarious conjectures) Theology assures us, that the Soul of man had not such an Origination, as those of other Animals, but was Gods own immediate Workmanship, and was united to the Body already form'd: And yet not so united, but that upon their Divorce, she will survive, and pass into a state, in which Death shall have no power over her.

Matth.
x. 28.

Gen. ij 7.
Zek. xij.
1.

Luke xx.
35, 36.
Matth.
xxv. 46.

I expect you will here object, that for the knowledge of the Perpetual Duration of separate Souls, we need not be beholding to the Scripture, since the Immortality of the Soul may be sufficiently prov'd by the sole Light of

of Nature, and particularly has been demonstrated by your great *Des Cartes*. But you must give me leave to tell you, that, besides that a matter of that weight and concernment cannot be too well prov'd, and consequently ought to procure a welcome for all good Mediums of Probation; besides this, I say, I doubt many *Cartesians* do, as well as others, mistake, both the difficulty under consideration, and the scope of *Des Cartes's* Discourse. For I grant, that by Natural Philosophy alone, the Immortality of the Soul may be prov'd against its usual Enemies, *Atheists* and *Epicureans*. For the ground, upon which these men think it mortal, being, That 'tis not a true substance, but onely a modification of Body, which consequently must perish, when the frame or structure of the Body, whereto it belongs, is dissolv'd: Their ground being this, I say, if we can prove by some Intellectual Operations of the Rational Soul, which Matter, however modifi'd, cannot reach, *That it is a Substance distinct from the Humane Body*, there is no reason, why the Dissolution of the Latter should infer the Destruction of the Former,

Former, which is a simple Substance, and as real a Substance as Matter it self, which yet the Adversaries affirm to be Indestructible. But though by the Mental Operations of the Rational Soul, and perhaps by other Mediums it may, against the *Epicureans*, and other meer Naturalists, who will not allow God to have any thing to do in the case, be prov'd to be Immortal in the sense newly propos'd; yet the same Proofs will not evince, that absolutely *it shall never cease to be*, if we dispute with Philosophers, who admit, as the *Cartesians* and many others do, that God is the sole Creator and Preserver of all things. For how are we sure but that God may have so ordain'd, That, though the Soul of Man, by the continuance of his ordinary and upholding Concourse, may survive the Body, yet, as 'tis generally believ'd, not to be created till it be just to be insus'd into the Body; so it shall be annihilated when it parts with the Body, God withdrawing at death that supporting influence, which alone kept it from relapsing to its first Nothing. Whence it may appear, that notwithstanding the Physical

D

proofs

proofs of the Spirituality and separableness of the Humane Soul, we are yet much beholding to Divine Revelation for assuring us, that its Duration shall be endless. And now to make good what I was intimating above, concerning the *Cartesians*, and the scope of *Des Cartes's* Demonstration, I shall appeal to no other than his own Expressions to evince, that he consider'd this matter for the main as we have done, and pretended to demonstrate, that the Soul is a Distinct Substance from the Body; but not that absolutely speaking it is Immortal. *Cur* (answers that excellent Author) *de immortalitate Animæ nihil scripserim, jam dixi in Synopsi mearum Meditationum. Quod ejus ab omni corpore distinctionem satis probaverim, supra ostendi. Quod vero additis, Ex distinctione Animæ à corpore non sequi ejus Immortalitatem, quia nihilominus dici potest, illam à Deo talis naturæ factam esse, ut ejus Duratio simul cum Duratione vitæ corporeæ finiatur, fateor à me refelli non posse. Neque enim tantum mihi assumo ut quicquam de iis quæ à libera Dei voluntate dependent, humana rationis vi determinare aggrediar.*

Docet

Des Cartes Responsione ad Objectiones secundas, pag. m. 95.

Docet Naturalis cognitio, &c. Sed si de absoluta Dei potestate queratur, an forte decreverit, ut humane anima iisdem Temporibus esse desinant, quibus Corpora quæ illis adiunguntur, solius Dei est, respondere. And if he would not assume to demonstrate by Natural Reason, so much as the Existence of the Soul after death, unless upon a supposition; we may well presume, that he would less take upon him to determine, what shall be the condition of that Soul after it leaves the Body. And that you may not doubt of this, I will give you for it his own confession, as he freely writ it in a private Letter to that Admirable Lady, the Princess *Elizabeth*, first Daughter to *Frederick King of Bohemia*, who seems to have desired his Opinion on that important Question, about which he sends her this Answer, *Pearce qui, &c.* i. e. As to the State of the Soul after this Life, my knowledge of it is far inferiour to that of Monsieur (he means Sir *Renelms Digby*) For, setting aside that which Religion teaches us of it, I confess, that by mere Natural Reason we may indeed make many conjectures to our own advantage, and

have fair *Hopes*, but not *any Assurance*. And accordingly in the next clause he gives the imprudence, of quitting what is certain for an uncertainty, as the cause why, according to Natural Reason, we are never to seek Death.

Nor do I wonder he should be of that mind. For all that meer Reason can demonstrate, may be reduced to these two things; *One*, that the Rational Soul, being an Incorporeal Substance, there is no necessity that it should perish with the Body; so that, if God have not otherwise appointed, the Soul may survive the Body, and last for ever: *The other*, that the Nature of the Soul, according to *Descartes*, consisting in its being a Substance that thinks, we may conclude, that, though it be by death separate from the Body, it will nevertheless retain the power of thinking. But now, whether either of these two things, or both, be sufficient to endear the state of separation after death, to a considering man, I think may be justly question'd. For, Immortality or Perseverance in Duration, simply consider'd, is rather a thing presuppos'd to, or a requisite of, *Felicity*, than a part of

of it; and being in it self an adiaphor-
 ous thing, assumes the nature of the
 state or condition to which 'tis joyn'd,
 and does not make that state happy
 or miserable, but makes the possessors
 of it more happy or more miserable
 than otherwise they would be. And
 though some School-men, upon Aery
 Metaphysical Notions, would have
 men think it is more eligib'e to be
 wretched, than not to be at all; yet we
 may oppose to their speculative su-
 bilities the sentiments of Mankind,
 and the far more considerable Testi-
 mony of the Saviour of Mankind,
 who speaking of the Disciple that be-
 tray'd him, says, *That it had been*
good for that man if he had never been
born. And Eternity is generally con-
 ceived to aggravate no less the mise-
 ries of Hell, than it heightens the
 joys of Heaven. And here we may
 consider, first, That meer Reason can-
 not so much as assure us absolutely,
 that the Soul shall survive the Body;
 For the Truth of which we have not
 onely *Cartesius's* Confession, lately
 recited, but a probable Argument,
 drawn from the nature of the thing,
 since, as the Body and Soul were
 brought

Mark
 xiv. 21.

brought together, not by any meet
 Physical Agents, and since their As-
 sociation and Union whilst they con-
 tinued together, was made upon Con-
 ditions that depended solely upon
 Gods free and arbitrary Institution;
so, for ought Reason can secure us of,
 one of the Conditions of that Affo-
 ciation *may be*, That the Body and
 Soul should not survive each other.
 Secondly, supposing that the Soul be
 permitted to outlive the Body, meer
 Reason cannot inform us what will be-
 come of her in her separate state, whe-
 ther she will be vitally united to any
 other kind of Body or Vehicle; and
 if to some, of what kind that will be,
 and upon what terms the Union will
 be made. For possibly she may be
 united to an unorganiz'd, or very im-
 perfectly organiz'd, Body, wherein she
 cannot exercise the same Functions
 she did in her Humane Body. As we
 see, that even in this Life the Souls of
 Natural Fools are united to Bodies,
 wherein they cannot discourse, or at
 least cannot Philosophize. And 'tis
 plain, that some Souls are introduc'd
 into Bodies, which, by reason of Pa-
 ralytical and other Diseases, they are
 unable

unable to move, though that does
 not always hinder them from being
 obnoxious to feel pain. So that, for
 ought we naturally know, a Humane
 Soul, separated from the Body, may be
 united to such a portion of Matter,
 that she may neither have the power
 to move it, nor the advantage of re-
 ceiving any agreeable Informations by
 its interventions, having upon the ac-
 count of that Union no other sense
 than that of pain. But let us now con-
 sider what will follow, if I should
 grant that the Soul will not be made
 miserable, by being thus wretchedly
 marched. Suppose we then, that she
 be left free to enjoy what belongs to
 her own nature : That being onely
 the Power of always thinking, it may
 well be doubted, whether th'exercise of
 that Power wil suffice to make her hap-
 py. You will perchance easily believe,
 that I love as well as another to enter-
 tain my self with my own thoughts,
 and to enjoy them undisturbed by
 visits, and other avocations ; I would,
 onely accompanied by a Servant and
 a Book, go to dine at an Inn upon a
 Road, to enjoy my thoughts the more
 freely for that day. But yet, I think, the

most contemplative men would, at least in time, grow weary of thinking, if they received no supply of Objects from without, by Reading, Seeing, or Conversing; and if they also wanted the opportunity of executing their thoughts, by moving the Members of their Bodies, or of imparting them, either by Discourſing, or Writing of Books, or by making of Experiments. On this occasion I remember, that I knew a Gentleman, who was, in *Spain*, for a State-crime, which yet he thought an Heroick action, kept close prisoner for a year in a place, where though he had allowed him a Diet not unfit for a Person of Note, as he was; yet he was not permitted the benefit of any Light, either of the Day or Candles, and was not accosted by any humane creature, save at certain times by the Jaylor, that brought him meat and drink, but was strictly forbidden to converse with him. Now though this Gentleman by his discourse appear'd to be a man of a lively humour, yet being ask'd by me, how he could do to pass the time in that sad solitude, he confessed to me, that, though he had the liberty

of walking too and fro in his Prison, and though by often recalling into his mind all the adventures and other passages of his former life, and by several ways combining and diversifying his Thoughts, he endeavoured to give his mind as much variety of employment as he was able; yet that would not serve his turn, but he was often reduc'd, by drinking large draughts of Wine, and then casting himself upon his bed, to endeavour to drown that Melancholly, which the want of new objects cast him into. And I can easily admit, he found a great deal of difference between the sense he had of thinking when he was at liberty, and that which he had when he was confin'd to that employment, whose delightfulness, like fire, cannot last long, when it is, as his was, denied both fuel and vent. And, in a word, though I most readily grant, that Thinking interwoven with Conversation and Action, may be a very pleasant way of passing ones *Time*, yet Man being by nature a sociable creature, I fear, *that* alone would be a dry and wearisome *Employment* to spend Eternity in.

Before

Before I proceed to the next Section, I must not omit to take notice, That though the brevity I propos'd to my self, keeps me from discoursing of any Theological Subjects, save what I have touch'd upon about the Divine Attributes, and the things I have mention'd about the Universe in general, and the Humane Soul; yet there are divers other things, knowable by the help of Revelation, and not without it, that are of so noble and sublime a Nature, that the greatest Wits may find their best Abilities both fully exercis'd, and highly gratifi'd by making Enquiries into them. I shall not name for proof of this the Adorable Mystery of the Trinity, wherein 'tis acknowledg'd, that the most soaring Speculators are wont to be pos'd, or to loose themselves; But I shall rather mention the Redemption of Mankind, and the Decrees of God concerning Men. For though these seem to be less out of the Ken of our Natural Faculties; yet 'tis into some things that belong to the former of them, that the Scripture tells us, *The Angels desire to pry*; and 'twas the consideration of the latter of them, that

that made one that had been caught
up into the Mansion of the Angels, Rom. xi.
amazedly cry out; *ὦ ἄδελφοί*; &c. 33.

Nor are these the onely things that
the Scripture it self terms Mysteries,
though, for brevities sake, instead of
specifying any of them, I shall con-
tent my self to represent to you in
general; that, since Gods wisdom is
boundless, it may, sure, have more ways
than one to display it self. And though
the material World be full of the
Productions of his Wisdom; yet that
hinders not but that the Scripture may
be enobled with many excellent Im-
presses, and, as it were, Signatures of
the same Attribute. For, as I was be-
ginning to say, it cannot but be high-
ly injurious to the Deity, in whom all
other True Perfections, as well as Om-
niscience, are both united and tran-
scendent, to think, that he can con-
trive no ways to disclose his Perfe-
ctions, besides the ordering of Matter
and Motion, and cannot otherwise de-
serve to be the Object of Mens Au-
dies, and their Admiration, than in the
capacity of a Creator.

And I think, I might safely add,
that besides these Grand and Myste-
rious

rious Points I came from mentioning there are many other noble and important things, wherein unassisted Reason leaves us in the dark; which though not so clearly reveal'd in the Scripture, are yet in an inviting measure discover'd there, and consequently deserve the indagation of a Curious and Philosophical Soul. Shall we not think it worth enquiring, whether the Satisfaction of Christ was necessary to appease the Justice of God, and purchase Redemption for Mankind? Or whether God, as Absolute and Supreme Governour of the World, might have *freely* remitted the Penalties of sin? Shall we not think it worth the inquiring, upon what Account, and upon what Terms, the Justification of Men towards God is transacted, especially considering how much it imports us to know, and how perplexedly a Doctrine, not in it self abstruse, is wont to be delivered? Shall not *we* inquire, whether or no the Souls of Men, before they were united to their Bodies, pre-existed in a happier state, as many of the Ancient and Modern *Jews* and *Platonists*, and (besides *Origen*) some Learned

Learned Men of our times do believe
 And shall not *we* be curious to know,
 whether, when the Soul leaves the Bo-
 dy, it do immediately pass to Heaven
 or Hell (as 'tis commonly believed,) or for want of Organs be laid, as it were, asleep in an insensible and un-
 active state, till it recover the Body at the Resurrection? (as many *Socinians* and others maintain:) Or whether it be conveyed into secret Recesses, where, though it be in a good or bad condition, according to what it did in the Body, 'tis yet repriev'd from the flames of Hell, and restrain'd from the Beatifick Vision till the Day of Judgment? (which seems to have been the opinion of many, if not most of the Primitive Fathers and Christians.) Shall not *we* be curious to know, whether at that great Decretory Day, this vast Fabrick of the World, which all confess must have its frame quite shatter'd, shall be suffer'd to relapse into its first Nothing, (as several Divines assert;) or shall be, after its Dissolution, renew'd to a better state, and, as it were, Transfigur'd? And shall not *we* inquire, whether or no in that future state of things, which shall ne-
 ver

Gen. ij.

21, 22,

23.

ver have an end, we shall know one another? (as *Adam*, when he awak'd out of his profound sleep, knew *Eve* whom he never saw before,) and whether those Personal Friendships and Affections, we had for one another here, and the pathetick Consideration of the Relations (as of Father and Son, Husband and Wife, Chaste Mistress and Virtuous Lover, Prince and Subject,) on which many of them were grounded, shall continue? Or whether all those things, as antiquated and slight, shall be obliterated, and, as it were, swallowed up &c. (as the former Relation of a Cousin a great way off, is scarce at all consider'd, when the Persons come so to change their state, as to be united by the strict Bonds of Marriage.)

But 'twere tedious to propose all the other Points, whereof the *Divine* takes cognizance, that highly merit an inquisitive mans curiosity; and about which, all the Writings of the old *Greek* and other *Heathen* Philosophers put together, will give us far less information, than the single Volume of Canonical Scripture. I foresee indeed, that it may nevertheless be objected,

objected, that in *some* of these Inquiries, Revelation incumbers Reason, by delivering things, which Reason is obliged to make its Hypothesis consistent with. But, besides that this cannot be so much as pretended of *all*; if you consider how much unassisted Reason leaves us in the dark about these matters, wherein she has not been able to frame so much as probable determinations, especially in comparison of those probabilities that Reason can deduce from what it finds one way or other delivered in the Scripture: If you consider this, I say, you will, I presume, allow me to say, That the revealed Truths, which Reason is obliged to comply with, if they be burdens to it, are but such Burdens as Feathers are to a Hawk, which instead of hindring his flight by their weight, enable him to soar toward Heaven, and take a larger prospect of things, than, if he had not feathers, he could possibly do.

And on this occasion, Sir, the greater Reverence I owe to the Scripture it self, than to its Expositors, prevails upon me to tell you freely, that you will not do right, either to Theology,
or,

or (the greatest Repository of its Truths) the Bible; if you imagine that there are no considerable Additions to be made to the Theological Discoveries we have already, nor no clearer Expositions of many Texts of Scripture, or better Reflections on that matchless Book, than are to be met with in the generality of Commentators, or of Preachers, without excepting the Antient Fathers themselves. For, there being in my opinion two things requisite, to qualify a Commentator to do right to his Theme, a competency of Critical Knowledge, and a Concern for the Honour and Interest of Christianity in general, assisted by a good Judgment to discern and select those things that may most conduce to it; I doubt, there are not many Expositors, as they are call'd, of the Scripture, that are not deficient in the former or the latter of these particulars, and I wish there be not too many that are defective in both.

That the knowledge of at least *Greek* and *Hebrew* is requisite to him, that takes upon him to expound Writings penn'd Originally in those Languages

guages, if the nature of the thing did not manifest it, you might easily be perswaded to believe, by considering with what gross mistakes the Ignorance of Languages has oftentimes blemish'd not onely the Interpretations of the School-men and others, but even those of the Venerable Fathers of the Church. For though generally they were worthy men, and highly to be regarded, as the grand Witnesses of the Doctrines and Government of the antient Churches; most of them very pious, many of them very eloquent, and some of them (especially the two Criticks, *Origen* and *Ferom*) very Learned; yet so few of the *Greek* Fathers were skill'd in *Hebrew*, and so few of the *Latin* Fathers either in *Hebrew* or *Greek*, that many of their Homilies, and even Comments, leave hard Texts as obscure as they found them; and, sometimes misled by bad Translations, they give them senses exceeding wide of the True: So that many times in their Writings they appear to be far better Divines then Commentators, and in an excellent Discourse upon a Text, you shall find but a very poor

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Exposition of it. Many of their Eloquent and devout Sermons being much better *Encomiasts* of the Divine Mysteries they treat of, than *Unrainers*. And though some Modern Translations deserve the Praise of being very useful, and less unaccurate than those which the Latine Fathers us'd; yet when I read the Scriptures (especially some Books of the Old Testament) in their Originals, I confess I cannot but sometimes wonder, what came into the mind of some, even of our Modern Translators, that they should so much Mistake, and sometimes Injure certain Texts as they do; and I am prone to think, that there is scarce a Chapter in the Bible (especially that part of it which is written in *Hebrew*) that may not be better Translated, and Consequently more to the Credit of the Book it self.

This Credit it misses of, not onely by mens want of sufficient *Skill* in Critical Learning, but (to come to the second Member of our late Division) for want of their having *Judgment* enough to observe, and *Concern* enough to propose those things in the Scripture

pture, and in Theology, that tend to the Reputation of either. For I fear there are too many, both Commentators and other Divines, that (though otherwise perhaps pious men) having espous'd a Church or Party, and an Aversion from all Dissenters, are solicitous when they peruse the Scripture, to take notice chiefly, if not only (I mean in points Speculative) of those things, that may either suggest Arguments against their Adversaries, or Answers to their Objections. But I meet with much fewer than I could wish, *who* make it their Business to *search the Scriptures* for those things (such as unheeded Prophecies, over-look'd Mysteries, and strange Harmonies) which being clearly and judiciously proposed, may make that Book appear worthy of the high extraction it challenges (and consequently of the veneration of Considering men) and *who* are solicitous to Discern and Make out, in the way of Governing and of Saving Men, reveal'd by God, so excellent an Oeconomy, and such deep Contrivances, and wise Dispensations, as may bring credit to Religion, not so much as

Ἐρευνᾶν
τὰς γρά-
φας.
Joh. v.
39.

'tis *Roman*, or *Protestant*, or *Socinian*, but as 'tis *Christian*. But (as I intimated before) these good affections for the repute of Religion in general, are to be assisted by a deep Judgment. For men that want either That, or a good Stock of Critical Learning, may easily over-see the best Observations (which usually are not Obvious) or propose as Mysteries, things that are either not Grounded; or not Weighty enough; and so (notwithstanding their good meaning) may bring a Disparagement upon what they desire to Recommend. And I am willing to grant, that 'tis rather for want of good Skill and good Judgment, than good Will, that there are so few that have been careful to do right to the Reputation of the Scripture, as well as to its Sense. And indeed when I consider, how much more to the Advantage of those Sacred Writings, and of Christian Theology in general, divers Texts have been explain'd and discours'd of by the Excellent *Grotius*, by *Episcopius*, *Masius*, Mr. *Mede*, and Sir *Francis Bacon*, and some other Late great Wits (to name now no Living ones) in their several kinds; than the same

same places have been handled by vulgar Expositors, and other Divines: And when I remember too, that one of these newly named Worthies was at once a great Philosopher, and a great Critick; (the three first being not so well vers'd in Philosophical Learning, and the last being unacquainted with the Eastern Tongues :) I cannot but hope, that when it shall please God to stir up persons of a Philosophical Genius, well furnish'd with Critical Learning, and the Principles of true Philosophy, and shall give them a hearty Concern for the Advancement of his Truths; these men, by exercising upon Theological matters, that Inquisitiveness and Sagacity that has made in our Age such a happy Progress in Philosophical ones, will make Explanations and Discoveries, that will justify more than I have said in praise of the study of our Religion and the Divine Books that contain the Articles of it. For these want not Excellencies, but onely skilful Unvailers. And if I do not tell you, that you should no more measure the Wisdom of God couch'd in the Bible, by the Glosses or Systems of common Expo-

fitors and Preachers, than Estimate
 the Wildome he has express'd in the
 contrivance of the World by *Magi-*
rus's or *Eustachius's* Physicks; yet I
 shall not scruple to say, That you
 should as little think, that there are no
 more Mysteries in the Books of Scrip-
 ture, besides those that the School-
 Divines and Vulgar Commentators
 have taken notice of, and unfolded;
 as that there are no other Mysteries in
 the Book of Nature, than those
 which the same School-men (who
 have taken upon them to interpret
Aristotle and Nature too) have ob-
 serv'd and explain'd. All the fine
 things, that Poets, Orators, and even
 Lovers have Hyperbolically said in
 praise of the Beauty of Eyes, will no-
 thing near so much recommend them
 to a Philosophers esteem, as the sight
 of one Eye skilfully dissected, or the
 unadorn'd Account given of its Stru-
 cture, and the admirable uses of its
 several parts, in *Scheiner's Oculus*, and
Des-Cartes's Excellent *Dioptricks*.
 And though I do not think my self
 bound to acquiesce in, and admire eve-
 ry thing that is propos'd as Mysterious
 and Rare by many Interpreters and
 Preachers;

Preachers; yet I think, I may safely compare several things in the Books we call the Scripture, to several others in that of Nature, in (at least) one regard. For, though I do not believe all the Wonders, that *Pliny*, *Ælian*, *Pontana*, and other Writers of that stamp, relate of the Generation of Animals, yet by perusing such faithful and accurate accounts, as sometimes *Galen*, *De usu Partium*, sometimes *Vesalius*, sometimes our *Harvey* (*de Ovo*) and our later Anatomists, and sometimes other true Naturalists, give of the Generation of Animals, and of the admirable Structure of their Bodies, especially those of Men, and such other parts of *Zoology*, as *Pliny* and the other Writers I nam'd with him, could make nothing considerable of, by perusing these (I say) I receive more pleasure and satisfaction, and am induc'd more to admire the works of Nature, than by all their Romantic and Superficial Narratives. And thus (to apply this to our present Subject) a close and critical account of the more vail'd and pregnant parts of Scripture, and Theological Matters, with such Reflections on them, as their Nature and Collation

would suggest to a Philosophical, as well as Critical, Speculator, would far better please a Rational Considerer, and give him a higher, as well as a better grounded, Veneration for the things explain'd, than a great many of those sleighter or ill-founded Remarks, wherewith the Expositions and Discourses of Superficial Writers, though never so florid or witty, gain the applause of the less discerning sort of men.

And here, on this occasion, I shall venture to add, that I despair not, but that a further use may be made of the Scripture, than either our Divines or Philosophers seem to have thought on. Some few Theologues indeed have got the name of *Supralapsarians*, for venturing to look back beyond the Fall of *Adam* for God's Decrees of Election and Reprobation. But, besides that their boldness has been disliked by the generality of Divines, as well as other Christians, the Object of their Speculation is much too narrow to be any thing near and adequate to such an Hypothesis as I mean. For me-thinks, that the *Encyclopedia's* and *Pansophia's*, that even men of an ele-

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vated *Genius* have aimed at, are not
 diffus'd enough to comprehend all
 that the Reason of a Man, improv'd
 by Philosophy, and elevated by the
 Revelations already extant in the Scrip-
 ture, may, by the help of free Rati-
 ocination, and the hints contain'd
 in those pregnant Writings (with
 those assistances of God's Spirit,
 which he is still ready to vouchsafe
 to them that duly seek them,) attain
 unto in this life. The Gospel com-
 prises indeed, and unfolds the whole
 Mystery of Man's Redemption, as far Acts xx.
 forth as 'tis necessary to be known for 27.
 our Salvation: And the *Corpuscula-
 rism* or Mechanical Philosophy,
 strives to deduce all the *Phænomena*
 of Nature from Adiaphorous Matter,
 and Local Motion. But neither the
 Fundamental Doctrine of Christia-
 nity, nor that of the Powers and Ef-
 fects of Matter and Motion, seems to
 be more than an Epicycle (if I may so
 call it) of the Great and Universal
 System of God's Contrivances, and
 makes but a part of the more general
 Theory of things, knowable by the
 Light of Nature, improv'd by the In-
 formation of the Scriptures: So that
 both

both these Doctrines, though very general, in respect of the subordinate parts of Theology and Philosophy, seem to be but members of the Universal Hypothesis, whose Objects, I conceive, to be the *Nature, Counsels, and Works of God, as far as they are discoverable by us* (for I say not to us) *in this Life.*

For those, to whom God has vouchsafed the privilege of mature Reason, seem not to enlarge their thoughts enough, if they think, that the Omniscient and Almighty God has bounded the Operations of his Power, and Wisdom, and Goodness, to the Exercise that may be given them for some Ages, by the Production and Government of Matter and Motion, and of the Inhabitants of the Terrestrial Globe, which we know to be but a Physical Point in comparison of that Portion of Universal Matter, which we have already discover'd.

For I account, that there are four grand Communities of Creatures, whereof things merely Corporeal make but one, the other three, differing from these, are distinct also from one another. Of the first sort are the Race
of

of Mankind, where Intellectual Beings are vitally associated with Gross and Organical Bodies. The second are Demons, or evil Angels; and the third, good Angels; (whether in each of those two kinds of Spirits, the Rational Beings be perfectly free from all union with Matter, though never so fine and subtile; or whether they be united to Vehicles, not Gross, but Spirituous, and ordinarily invisible to Us.)

Nor may we think, because Angels and Devils are two names quickly utter'd, and those Spirits are seldom or never seen by us, there are therefore but few of them, and the Speculation of them is not considerable. For, as their Excellency is great, (as we shall by and by shew) so for their number, they are represented in Scripture as an Heavenly Host, standing on the right and left hand of the Throne of God. And of the good Angels, our Saviour Speaks of having more than twelve Legions of them at his command. Nay, the Prophet Daniel saith, that to the *Antient of days*, no less than millions ministered unto him, and hundreds of millions stood before him. And of the evil Angels the

Matth.
xxvj. 53.

Dan. vij.
10.

Mark v.

9.
Luke

viii. 30.

the Gospel informs us, that enough to call them a Legion (which you know is usually reckon'd, at a moderate rate, to consist of betwixt six and seven thousand) possess'd one single man. For my part, when I consider, that matter, how vastly extended, and how curiously shap'd soever, is but a brute thing, that is onely capable of Local motion and its effects and consequents on other Bodies, or the Brain of man, without being capable of any True, or at least any Intellectual, Perception, or true Love or Hatred; and when I consider the Rational Soul as an immaterial and immortal Being, that bears the Image of its Divine Maker, being indow'd with a capacious Intellect, and a Will that no Creature can force: I am by these Considerations dispos'd to think, the Soul of Man a nobler and more valuable Being, than the whole Corporeal World; which though I readily acknowledge it to be admirably contriv'd, and worthy of the Almighty and Omniscient Author, yet it consists but of an Aggregate of Portions of brute Matter, variously shap'd and connected by Local Motion (as Dow, and Roles, and

and Loves, and Cakes, and *Vermicelli*, Wafers, and Pie-crust, are all of them diversified Meal;) but without any knowledge either of their own Nature, or of that of their Author, or of that of their Fellow-creatures. And as the Rational Soul is somewhat more noble and wonderful, than any thing meerly Corporeal, how vast soever it can be, and is of a more excellent Nature, than the curiouslest piece of Mechanism in the world, the Humane Body; so to enquire what shall become of it, and what Fates it is like to undergo hereafter, does better deserve a man's Curiosity, than to know what shall befall the Corporeal Universe, and might justly have been to *Nebuchadnezzar* a more desirable part of knowledge, than that he was so troubled for want of, when it was adumbrated to him in the mysterious Dream, that contain'd the Characters and Fates of the four Great Monarchies of the World. And as man is intrusted with a Will of his own, whereas all material things move onely as they are mov'd, and have no self-determining power, on whose account they can resist the Will of God; and

Dan. ij.
31, 32,
&c.

as

as also of Angels, at least some Orders of them, are of a higher Quality (if I may so speak) than Humane Souls; so 'tis very probable, that in the Government of Angels, whether good or bad, that are Intellectual Voluntary Agents, there is requir'd and employ'd far greater displays of Gods Wisdom, Power, and Goodness, than in the guidance of Adiaphorous Matter; and the method of God's Conduct in the Government of these, is a far nobler Object for men's Contemplation, than the Laws, according to which the parts of Matter hit against, and juggle, one another, and the effects or results of such Motions.

And accordingly we find in Scripture, that, whereas about the production of the material World, and the setting of the frame of Nature, God employ'd onely a few commanding Words, which speedily had their full effects, to govern the Race of Mankind, even in order to their own Happiness, he employ'd not onely Laws and Commands, but Revelations, Miracles, Promises, Threats, Exhortations, Mercies, Judgments, and divers other Methods and Means; and yet often-times,

times, when he might well say, as he
 did once by his Prophet, *What could* Isa. v. 4

*I have done more to my Vineyard than I
 have not done it?* he had just cause to
 expostulate as he did in the same place,
*Wherefore, when I looked that it should
 bring forth grapes, brought it forth
 wild grapes?* and to complain of
 men, as by that very Prophet he did
 even of Israel, *I have spread out my* Isa. lxy. 2
hands all the day to a rebellious people.

But not to wander too far in this dig-
 gression; what we have said of Men,
 may render it probable, that the
 grand Attributes of God are more sig-
 nally exercis'd, and made more con-
 spicuous in the making and govern-
 ing of each of the three Intellectual
 Communities, than in the framing and
 upholding the Community of meer
 bodily things. And since all Immate-
 rial Substances are for that reason na-
 turally Immortal, and the Universal
 Matter is believ'd so too, possibly
 those Revolutions, that will happen
 after the Day of Judgment, wherein
 though probably not the Matter, yet
 that state and constitution of it, on
 whose account it is *This World*, will
 be destroyed, and make way for quite
 new

new *Frames* and *Sets* of things corporeal, and the Beings that compose each of these Intellectual Communities, will, in those numberless Ages they shall last, travel through I know not how many successive changes and adventures; perhaps, I say, these things will no less display, and bring glory, to the Divine Attributes, than the Contrivance of the world, and the Oeconomy of Man's Salvation, though these be (and that worthily) the Objects of the Naturalists and the Divines Contemplation. And there are some passages in the Prophetical part of the Scripture, and especially in the Book of the *Apocalypse*, which, as they seem to intimate, that *as* God will perform great and noble things, which Mechanical Philosophy never reach'd to, and which the generality of Divines seem not to have thought of; *so* divers of those great things may be, in some measure, discover'd by an attentive Searcher into the Scriptures, and that so much to the advantage of the devout Indagator, that St. *Fohn*, near the beginning of his *Revelations*, pronounces them happy, that read the matters contain'd in
this

this Prophecy, and * *observe* the things written therein. Which implies, that by heedful comparing together the Indications couched in those Prophetick Writings, with Events and Occurrences in the Affairs of the World, and the Church, we may discover much of the admirable Oeconomy of Providence in the Governing of both: And I am prone to think, the early discoveries of such great and important things, to be in Gods account no mean vouchsafements, not onely because of the title of *Happy* is here given to him that attains them, but because the two persons, to whom the great discoveries of this kind were made, I mean, the Prophet *Daniel* and *St. John*, the first is by the Angel said to be, on that account, a person highly favour'd; and the other is in the Gospel represented as our Saviour's beloved Disciple. And you will the more easily think the foreknowledge of the Divine Dispensa-

tions gatherable from Scripture to be highly valuable, if you consider, that, according to St. Paul, those very Angels that are call'd *Principalities and Powers in heavenly places*, learnt by the Church some abstruse points of the manifold wisdom of God. But I must no longer indulge Speculations, that would carry my Curiosity beyond the bounds of time it self, and therefore beyond those that ought to be plac'd to this occasional excursion.

And yet, as on the one side, I shall not allow my self the presumption of framing conjectures about those remote Dispensations, which will not, most of them, have a beginning before this world shall have an end; so on the other side I would not discourage you, or any pious Inquirer, from endeavouring to advance in the knowledge of those Attributes of God, that may successfully be studied, without prying into the Secrets of the future.

And here, Sir, let me freely confess to you, that I am apt to think, that, if men were not wanting to Gods glory, and their own satisfaction, there would be far more Discoveries made, than

than are yet attain'd to, of the Divine Attributes. When we consider the most simple or uncompounded Essence of God, we may easily be perswaded, that what belongs to Any of His Attributes (some of which thinking men generally admire) must be an Object of Enquiry exceeding Noble, and worthy of our knowledge. And yet the abstruseness of this knowledge is not in All particulars so invincible, but that I strongly hope, a Philosophical Eye, illustrated by the Revelations extant in the Scripture, may pierce a great deal farther than has yet been done, into those mystetious Subjects, which are too often (perhaps out of a mistaken Reverence) so poorly handled by Divines and Schoolmen, that not onely what they have taught, is not worthy of God (for that's a necessary, and therefore excusable, deficiency) but too frequently it is not worthy of Men, I mean, of Rational Creatures, that take upon them to treat of such high Points, and instruct others about them. And I question not but your Friend will the less scruple at this, if he call to mind those new and handsome Notions about

some of the Attributes of God, that his Master *Cartesius*, though but moderately vers'd in the Scriptures, has presented us with. Nor do I doubt but that a much greater progress might be made in the Discovery of Subjects, where, though we can never know *all*, we may still know *farther*, if Speculative Genius's would propose to themselves particular Doubts and Enquiries about particular Attributes, and frame and examine Hypotheses, establish Theorems, draw Corollaries; and (in short) apply to this study the same sagacity, assiduity, and attention of mind, which they often employ about Inquiries of a very much inferior nature; insomuch as *Descartes* (how profound a Geometrician soever he were) confesses in one of his Epistles, that he employ'd no less than *six weeks* to find the solution of a Problem or question of *Pappus*. And *Pythagoras* was so addicted to, and concern'd for Geometrical Speculations, that when he had found that famous Proposition, which makes the 47th. in *Euclid's* I. Book, he is recorded to have offer'd a *Hecatomb*, to express his joy and gratitude for the Discovery :
which

which yet was but of one Property of one sort of Right-lin'd Triangles. And certainly if Christian Philosophers did rightly estimate, how noble and fertile Subjects the Divine Attributes are, they would find in them wherewithall to Exercise their best parts, as well as to Recompence the Imployment of them. But because what I would dissuade, does not perhaps proceed onely from Laziness, but from a Mistake; as if there were little to be known of so Incomprehensible an Object as God, save that in General all his Attributes are like himself, Infinite, and consequently not to be fully Known by Humane Understandings, because They are Finite; I shall add, that though it be true, that by Reason of God's Infinity, we cannot *Comprehend* him, that is, have a *full and adequate knowledge* of him; yet we may not onely know very many things concerning him, but, which is more, *may* make an Endless Progress in that Knowledge. As, no doubt, *Pythagoras* (newly mention'd) knew very well what a Triangle was, and was acquainted with divers of its Properties and Affections before he disco-

ver'd that famous One. And though since him, *Euclid*, *Archimedes*, and other Geometricians have demonstrated, I know not how many other Affections of the same Figure, yet they have not to this day *Exhausted* the Subject: And possibly, I, (who pretend not to be a Mathematician) may now and then in managing certain *Equations* I had occasion for, have lighted upon some Theorems about Triangles, that occurr'd not to any of them. The Divine Attributes are such fruitful Themes, and so worthy of our Admiration, that the whole Fabrick of the Universe, and all the *Phenomena* exhibited in it, are but Imperfect Expressions of Gods Wisdom, and some few of his other Attributes. And I do not much marvel, that the Angels themselves are represented in Scripture as imploy'd in Adoring God, and Admiring his Perfections. For even *they* being but Finite, can frame but inadequate Conceptions of *Him*; and consequently must Endeavour by *many* of them to make amends for the Incompleatness of *every* one of them; which yet they can never but Imperfectly do. And yet

God's

Isa. vj.

2, 3.

Luke ij.

13, 14.

Revel. v.

11, 12.

Gods Infinity can but very improperly be made a Discouragement of our Enquiries into his Nature and Attributes. For (not now to examine whether *Infinity*, though express'd by a Negative word, be not a Positive thing in God) we may, notwithstanding his Infinity, discover as much of him as our Nature is capable of knowing: And what harm is it to him that is drinking in a River, that he cannot drink up all the water, if he have liberty fully to quench his thirst, and take in as much Liquor as his Stomack can contain. Infinity therefore should not hinder us from a Generous Ambition to learn as much as we can of an Object, whose being Infinite does but make our knowledge of it the more noble and desirable, which indeed it is in such a degree, that we need not wonder that the Angels are represented as never weary of their Employment of contemplating and praising God. For, as I lately intimated, that they can have but inadequate Idea's of those boundless Perfections, and by no number of those Idea's can arrive to make amends for the Incompleatness of them, so it need not

seem strange that in fresh Discoveries of new Parts (if I may so call them) of the same Object, it being *such a one*, they should find nobler and happier Entertainments than any where else variety could afford them.

The second Section.

HAVING thus taken notice of some Particulars of those many which may be employ'd to shew, how *Noble the Objects* are, that Theology proposes to be contemplated, I now proceed to some Considerations that may make us sensible how great an *Obligation* there lies on us, to addict our selves to the study of them.

Yet of the Particulars whereon this Obligation may be grounded, I shall now name but two, they being indeed comprehensive ones, *Obedience*, and *Gratitude*.

And first let me represent, that it needs not, I suppose, be solicitously proved, That 'tis the Will and Command of God, that men should learn those Truths that he has been pleased

to teach, whether concerning his Nature or Attributes, or the way wherein he will be Served and Worshipped by Man. For if we had not Injunctions of Scripture to that purpose, yet your Friend is too Rational a Man to believe, that God would so solemnly cause his Truths to be published to Mankind, both by Preaching and Writing, without Intention to Oblige, those (at least) that have the capacity and opportunity to enquire into some of them; and if it appear to be *His will*, that a person so qualified, should search after the most important Truths that he hath reveal'd, it cannot but be *their duty* to do so. For though the nature of the thing it self did not lay any Obligation on us, yet the Authority of Him that Commands it, would: since being the Supreme and Absolute Lord of all His Creatures, he has as well a full right to make what Laws he thinks fit, and enjoyn what service he thinks fit, as a power to punish those that either violate the one, or deny the other; and accordingly 'tis very observable, that before *Adam* fell, and had forfeited his happy state by his

Gen. ij.
16, 17.

his own transgression, he not onely had a Law Impos'd upon him, but such a Law, as, being about a matter it self Indifferent (for so it was to eat, or not to eat of the Tree of Life as well as of any other,) derived its whole power of obliging from the meer will and pleasure of the Law-giver. Whence we may learn, that Man is subject to the Laws of God, not as he is Obnoxious to him, but as he is a Rational Creature, and that the thing that is not a duty in its own nature, may become an indispensable one barely by its being commanded. And indeed, *it our first Parent* in the state of Innocency and Happiness, wherein he tasted of Gods Bounty, without, as yet, standing in need of his Mercy, was most strictly obliged out of meer Obedience to conform to a Law, the matter of which was indifferent in it self; sure we, in our laps'd condition, must be under a high Obligation to obey the declared will of God, whereby we are enjoyned to study his Truths, and perform that which has so much of intrinsick Goodness in it, that it would be a duty, though it were not commanded; and has such Recompences proposed

proposed to it, that it is not more a Duty, then it will be an Advantage.

But it is not only Obedience and Interest that should engage us to the study of Divine things, but *Gratitude*, and that excited by so many important Motives, that he who said, *Ingratum si dixeris, omnia dixeris*, could not think Ingratitude so much worse than ordinary Vices, as a contempt of the Duty I am pressing, would be worse than an ordinary Ingratitude.

It were not difficult on this occasion to manifest, that we are extremely great Debtors unto God; both as he is the Authour and the Preserver of our very Beings; and as he (immediately or mediately) fills up the measure of those continual Benefits with all the Prerogatives and other Favours we *do* receive from him as Men; and the higher Blessings, which (if we are not wanting to our selves) we *may* receive from him as Christians.

But to shew, in how many Particulars, and to how high a Degree, God is our Benefactor, were to lanch out into too Immense a Subject; which ~~twere~~ twere the less proper for me to do, because

seraph.
Leue.

because I have in other Papers discours'd of those matters already. I will therefore single out a Motive of Gratitude, which will be peculiarly pertinent to our present purpose. For whereas your Friend does so highly value himself upon the Study of Natural Philosophy, and despises not only Divines, but States-men, and even the Learned st Men in other parts of Philosophy and Knowledge, because they are not vers'd in Physicks; he owes to God that very Skill, among many other Vouchsafements. For it is God who made Man *unlike the Horse and the Mule, who have no understanding*, and endow'd him with that noble power of Reason, by the exercise of which he attains to whatever knowledge he has of Natural things above the Beasts that perish. For, that may justly be applied to our other Acquisitions, which *Moses*, by Gods appointment, told the *Israelites* concerning the Acquisits of Riches; where he bids the people beware, That when their Herds, and their Flocks, and other Treasures were multipli'd, their heart be not lifted up, and prompt them to say, *My power, and the might*

Psal.
xcxij. 9.

Deut.
viiij. 19;
12, 11;

of my hand hath gotten me this wealth.

But, (subjoyns that excellent Person, as well as Matchless Law-giver) *Thou*

shalt remember the Lord thy God, for it is he that giveth thee power to get wealth.

But to make Men Rational Creatures,

is not all God has done towards the making them Philosophers. For, to

the knowledge of particular things,

Objects are as well requisite as Faculties; and if we admit the probable

Opinion of Divines, who teach us, that the Angels were created before

the Material World, as being meant by those *Sons of God*, and *Morning Stars*,

that with glad Songs and Acclamations celebrated the Foundations of the Earth; we must allow, that

there were many creatures endowed with at least as much Reason as your

Friend, who yet were unacquainted with the Mysteries of Nature, since

She her self had not yet receiv'd a Being. Wherefore God having as well

made the World, as given Man the Faculties whereby he is enabled to

contemplate it; Naturalists are as much obliged to God for their Know-

ledge, as we are for our Intelligence to those that write us Secrets in Cy-

phers,

13, 14,

18,

Job
xxxviii.
5, 6, 7,

phers, and teach us the skill of decyphering things so written; or to those who write what would fill a Page in the compass of a single Penny, and present us to boot a Microscope to enable us to read it. And as the Naturalist hath peculiar Inducements to Gratitude for the Endowment of Knowledge; so Ingenuity lays this peculiar Obligation on him to express his Gratitude in the way I have been recommending, That *'tis one of the acceptablest ways it can be express'd in;* especially since by this way, Philosophers may not onely exercise their own gratitude towards God, but procure him that of others. How pleasing mens hearty Praises are to God, may appear among other things, by what is said and done by that Royal Poet, whom God was pleased to declare *a man after his own heart*; for he introduces God pronouncing, *Whoso offereth Praise, glorifieth me*; where the word our Interpreters render *offereth*, in the Hebrew signifies to *Sacrifice*; with which agrees, that else-where those that pay God their Praises, are said to *Sacrifice to him the calves of their lips.* And that excellent Person, to whom

Hof. xiv.

2.

God

God vouchsafed so particular a Testimony, was so assiduous in this Exercise, that the Book which we, following the *Greek*, call *Psalms*, is, in the Original, from the things it most abounds with, called *Sepher Tehillim*, i. e. *The Book of Praises*. And to let you see, that many of his Praises were such, as the Naturalist may best give, he exclaims in one place, *How manifold are thy works, O Lord? how wisely hast thou made them*, (as *Junius* and *Tremellius* render it, and the Hebrew will bear) and else-where, *The Heavens declare the glory of God, and the Firmament sheweth his handy-work*, &c. Ag: in, in another place, *I will praise thee, because I am fearfully and wonderfully made. Marvellous are thy works, and that my soul knoweth right well*. And not content with many of the like Expressions, he does several times in a devout Transport, and Poetical Strain, invite the Heavens, and the Stars, and the Earth, and the Seas, and all the other Inanimate Creatures, to joyn with him in the celebration of their common Maker. Which though it seem to be meerly a Poetical Scheme, yet in some sort it might become

Psal. civ.
24.

Psal. xix.
1.

Psal.
cxxxix.
14.

come a Naturalist, who by making out the Power, Wisdom, and Goodness of the Creator, and by reflecting thence on those Particulars wherein those Attributes shine, may, by such a devout Consideration of the Creatures, make them, in a sense, joyn with him in glorifying their Author.

In any other case, I dare say, your Friend is not so ill natur'd, but that he would think it an unkind piece of Ingratitude, if some great and excellent Prince, having freely and transcendently oblig'd him, he should not concern himself to know what manner of Man his Benefactor is; and should not be solicitous to inform himself of those particulars, relating to the Person and Affairs of that obliging Monarch, which were not onely in themselves worthy of any mans Curiosity, but about which the Prince had solemnly declar'd he was very desirous to have men Inquisitive. And sure 'tis very disingenious, to undervalue or neglect the knowledge of God Himself for a Knowledge which we cannot attain without him, and by which he design'd to bring us to that study we neglect for it: which is not onely

not

not to use him as a Benefactor, but as
 if he meant to punish him (if I may
 so speak) for having obliged us, since
 we so abuse some of his Favours, as to
 make them Inducements to our Un-
 thankful Disregard of his Intentions
 in the rest. And this Ingratitude is
 the more culpable, because the Laws
 of Ingenuity, and of Justice it self,
 charge us to Glorifie the Maker of all
 things visible, not onely upon our
 own account, but upon that of all his
 other works. For by Gods endowing
 of none but Man here below with a
 Reasonable Soul, not onely he is the
 sole visible Being that can return
 Thanks and Praises in the World, and
 thereby is obliged to do so, both for
 himself, and for the rest of the Crea-
 tion: but it is for Mans advantage, that
 God has left no other visible Beings
 in the World, by which he can be
 studied and celebrated. For Reason is
 such a Ray of Divinity, that, if God
 had vouchsafed it to other parts of the
 Universe besides Man, the absolute
 Empire of Man over the rest of the
 World must have been shad'd, or
 abridg'd. So that he, to whom it was
 equally easie to make Creatures Su-

perior to Man (as the Scripture tells us of Legions, and Myriads of Angels) as to make them Inferiour to him, dealt so obligingly with Mankind, as rather to Trust (if I may so speak) our Ingenuity, whether he shall reap any Celebrations from the Creatures we converse with, than Lessen our Empire over them, or our Prerogatives above them.

But I fear, that, notwithstanding all the Excellency of reveal'd Truths, and consequently of that onely Authentic Repository of them, the Scripture, you, as well as I, have met with some (for I hope there are not many) *Knaves*, that think to excuse the neglect of the study of it, by alledging, that to them who are Laymen, not Ecclesiasticks, there is requir'd to Salvation onely Explicite knowledge but of very few Points, which are so plainly furnish'd up in the Apostles Creed, and are so often and conspicuously set down in the Scripture, that one needs not much search or study it to find them there.

In answer to this Allegation, I readily grant, that through the great goodness of God, *who is willing to have*

have all men saved, and come to the knowledge of the Truth, that is necessary to be so, there are much fewer Articles absolutely necessary to be by all men distinctly believed, than may be met with in divers long Confessions of Faith, some of which have, I fear, less promoted Knowledge than impair'd Charity. But then it may be also consider'd, 1. That 'tis not so easie for a Rational Man, that will trouble himself to enquire no farther than the Apostles Creed, to satisfie himself upon good grounds, that all the Fundamental Articles of Christianity are contain'd in it. 2. That the Creed proposes onely the *Credenda*, not the *Agenda* of Religion; whereas the Scriptures were designed, not onely to teach us what Truths we are to believe, but by what Rules we are to live; the obedience to the Laws of Christianity being as necessary to Salvation, as the belief of its Mysteries. 3. That besides the things which are absolutely necessary, there are several that are highly useful, to make us more clearly understand, and more rationally and firmly believe, and more steadily practise, the points that are

Joh. xxi

7.
Heb. v. 9.

Joh. v. 39.
Search,
or, You
search the
Scri-
ptures.
Coloff.
iii. 16.

necessary. 4. And since, whether or no those words of our Saviour to the Jews, *ἔρευσατε τὰς γραφάς*, be to be rendred in the Imperative or the Indicative Mode; St. Paul would have the word of Christ to *dwelt richly in us*, (by which, whether he mean the holy Scriptures then extant, or the Doctrine of Christ, is not here material,) thereby teaching us, that searching into the matters of Religion may become necessary as a Duty, though it were not otherwise necessary as a Means of attaining Salvation. And indeed 'tis far more pardonable to want or miss the knowledge of Truths, than to despise or neglect it. And the goodness of God to illiterate or mistaken persons, is to be suppos'd meant in pity to our Frailties; not to encourage our Laziness; nor is it necessary, that he that *pardons* those Seekers of his Truths that miss them, should *excuse* those Despisers that will not seek them.

But whether or no by this design'd neglect of Theology the persons, I deal with, do sufficiently consult their own safety, I doubt they will not much recommend their Ingenuity.
For

For to have received from God a greater measure of Intellectual Abilities than the generality of Christians, and yet willingly to come short of very many of them, in the knowledge of the Mysteries and other Truths of Christianity, which he often invites us, if not expressly commands, to search after, is a course that will not relish of over-much gratitude. Is it a piece of That, and of Ingenuity, to receive ones Understanding and ones Hopes of Eternal Felicity from the Goodness of God, without being solicitous of what may be known of his Nature and Purposes by so excellent a way as his own Revelation of them? To dispute anxiously about the Properties of an Atome, and be careless about the Inquiry into the Attributes of the great God, *who formed all things*; to investigate the spontaneous generation of such vile Creatures as Insects, than the Mystrious Generation of the Adorable Son of God; and, in a word, to be more concern'd to know every thing that makes a Corporeal part of the World, than the Divine and Incorporeal Author of the whole.

Prov.
xxvj. 10.

And then, is it not, think you, a
great

great piece of respect, that these men pay to those Truths, which God thought fit to send sometimes Prophets and Apostles, sometimes Angels, and sometimes his onely Son himself to reveal, that such Truths are so little valued by them, that rather than take the pains to study them, they will implicitly, and at adventures believe, what that Society of Christians, they chance to be born and bred in, have (truly or falsely) delivered concerning them? And does it argue a due regard to points of Religion, that those, who would not believe a Proposition in *Statics*, perhaps about a meer Point, the Centre of Gravity, or in Geometry, about the Properties of some nameless curve Line, or some such other things, (which to ignore, is usually not a blemish, and about which, to be mistaken, is more usually without danger,) should yet take up the Articles of Faith, concerning matters of great and everlasting Consequence, upon the Authority of Men, Fallible as themselves, when satisfaction may be had without them from the Infallible Word of God? In this very unlike those

those *Bereans*, whom the *Evangelist* honours with the Title of *Noble*, that when the Doctrines of the Gospel were proposed to them, *they searched the Scriptures daily, whether those things were so.* Acts xvij 11.

Again, if a man should refuse to learn to read any more, than just as much as may serve his turn, by intituling him to the benefit of the Clergy, to save him from hanging, would these men think so small a measure of Literature, as he had acquir'd on such an account, could prove that man to be a Lover of Learning, and yet a neglecter of the study of all not absolutely necessary - Divine Truths, during ones life, because the belief of the Articles of the Creed may make a shift to keep him from being doom'd to Hell for Ignorance after his death, will not by (what in a Learned man must be) so pitiful a degree of knowledge be much better intitled to that Ingenious Love of God and his Truths, that becomes a Rational Creature and a Christian.

The ancient Prophets, though honour'd by God with direct Illuminations, were yet very solicitous to find

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1 Pet. j.
12.psal. cxix.
18.

Revel. j.

Matth.

xj. 15.

Mark iv.

9. 23.

Luke

xlij. 8.

1.

out and learn the very Circumstances of the Evangelical Dispensations, which yet they did not know. And some of the Gospel Mysteries are of so noble and excellent a nature, that *the Angels themselves desire to look in to them.* And though all the Evangelical Truths are not precisely necessary to be known, it may be both a Duty not to despise the study of them, and a Happiness to employ our selves about it. It was the earnest Prayer of a great King, and no less a Prophet, that *his eyes might be opened to behold* (not the obvious and necessary Truths, but) *the wondrous things of Gods Law.* He is pronounced Happy in the beginning of the *Apocalypse*, that reads and observes the things contain'd in that dark and obscure part of Scripture, And 'tis not onely those Truths that make Articles of the Creed, but divers other Doctrines of the Gospel, that Christ himself judged worthy to be concluded with this *Epiphonema*, *He that hath ears to hear, let him hear;* on which the excellent *Grotius* makes this just Paraphrase, *Intellectus nobis à Deo potissimum datus est, ut cum intendamus documentis ad pietatem pervenimus* The

The third Section.

I Come now to our third and last Inducement to the study of Divine things, which consists in, and comprises the *Advantages* of that study, which do as much surpass those of all other Contemplations, as Divine things transcend all other Objects. And indeed, the utility of this study is so pregnant a Motive, and contains in it so many Invitations, that your Friend must have as little sense of Interest as of Gratitude, if he can neglect such powerful and such ingaging Invitations!

For, in the first place, Theological Studies ought to be highly endeared to us by the Delightfulness of considering such noble and worthy Objects as are therein propos'd.

The famous Answer given by an excellent Philosopher, who being ask'd what he was born for, repli'd, *To contemplate the Sun*, may justly recommend their choice, who spend their time in contemplating the Ma-
ker

ker of the Sun, to whom that glorious Planet it self is but a shadow. And perhaps that Philosopher failed more in the Instance than in the Notion : For his Answer implies, That Man's End and Happiness consists in the exercise of his noblest Faculties on the noblest Objects. And surely the seat of *Formal Happiness* being the Soul, and that Happiness consequently consisting in the Operations of her Faculties ; as the Supreme Faculty of the Mind is the Understanding , so the highest Pleasures may be expected from the due Exercise of it upon the sublimest and worthiest Objects. And therefore I wonder not, that though some of the School-men would assign the Will a larger share in Mans Felicity, than they will allow the Intellect ; yet the generality of them are quite of another mind, and ascribe the Preheminence in point of Felicity to the Superiour Faculty of the Soul. But, whether or no this Opinion be true in all Cases, it may at least be admitted in ours : For, the chief Objects of a Christian Philosophers Contemplation, being as well the Infinite Goodness, as the other boundless Perfections

fedions of God, they are naturally
 fitted to excite in his mind an ardent
 love of that adorable Being, and those
 other joyous Affections and virtuous
 Dispositions, that have made some
 men think Happiness chiefly seated in
 the Will. But having intimated thus
 much by the way, I pass on to add,
 That the contentment afforded by the
 assiduous discovery of God and Di-
 vine Mysteries, has so much of affi-
 nity with the Pleasures, that shall
 make up mens Blessedness in Heaven
 it self, that they seem rather to differ
 in Degree than in Kind. For, the happy
 state even of Angels is by our Saviour
 represented by this Imployment, that
*they continually see the face of his Fa-
 ther who is in Heaven.* And the same
 infallible Teacher, intending else-
 where to express the Celestial Joys
 that are reserv'd for those, who for
 Their sake deny'd themselves sensual
 Pleasures, employs the Vision of God
 as an Emphatical Periphrase of Felici-
 ty, Blessed, said he, *are the pure in heart,
 for they shall see God.* And as Aristotle
 reaches, that the Soul doth after a sort
 become that which it Speculates.
 St. Paul and St. John assure us, that
 God

Matth.
 v. 8.

1 Joh. iij.

2.

*OTI.

God is a transforming Object, and that in Heaven we shall be like him, for (or, because) we shall see him as he is. And though I readily admit, that this Beatifick Vision of God, wherein the Understanding is the proper Instrument, includes divers other things which will concur to the compleat Felicity of the future Life; yet I think, we may be allowed to argue, that that ravishing Contemplation of Divine Objects, will make *no small part* of that happy Estate, which in these Texts take its Denomination from it.

I have above intimated, that the Scripture attributes to the Angels themselves Transports of Wonder and Joy upon the Contemplation of God, and the Exercises they consider of his Wisdom, Justice, or some other of his Attributes. But least in referring you to the Angels, you should say, that I do in this Discourse lay aside the Person of a Naturalist, in favour of Divines; I will refer you to *Des Cartes* himself, whom I am sure your Friend will allow to have been a rigid Philosopher, if ever there were any. Thus then speaks he in that Treatise, where
he

He thinks he employs a more than Mathematical Rigor; and where he was obliged to utter those (I had almost said Passionate) words, I am going to cite from him, onely by the Impressions made on him by the transcendent Excellency of the Object he Contemplated; *Sed priusquam* (says he) *hoc diligentius examinem, simulque in alias veritates quæ inde colligi possunt, inquiram, placet hic aliquandiu in ipsius Dei contemplatione immorari, ejus attributa apud me expendere, & immensi hujus Laminis pulchritudinem, quantum caligantis Ingenii mei acies ferre poterit, intueri, admirari, adorare. Ut enim in hac sola Divinæ Majestatis Contemplatione summam alterius vitæ felicitatem consistere fide credimus, ita etiam jam ex eadem, licet multo minus perfecta, maximam, cujus in hac vita capaces sumus, voluptatem, percipi posse experimur.*

*Medit.
tertiam suam
finem.*

But as high a satisfaction as the Study of Divine things affords by the Nobleness of its Object, the Contentment is not much Inferiour that accrues from the same Study upon the score of the Sense of a mans having in it performed his Duty. To make
actions

Exod. xv.
25.

Matth. v.
29, 30.

actions of this nature satisfactory to us, there is no need, that the things we are employ'd about, should in themselves be Excellent or Delightful; the inward gratulations of Conscience for having done our Duties is able to swallow the bitterest Pills, and, like the Wood that grew by the Waters of *Marah*, to correct and sweeten that Liquor, which before was the most distastful. Those antient Pagan *Heroes*, whose Vertues may make us blush, being guided but by natural Reason, and innate Principles of Moral Virtues, could find the most difficult and most troublesome Duties, upon the bare account of their being Duties, not onely Tolerable but Pleasant. And though to deny some Lusts be, in our Saviours esteem, no less uneasie, then for a man to *pluck out his right eye, or cut off his right hand*; yet even Ladies have with satisfaction chosen, not onely to deny themselves the greatest Pleasures of the Senses, but to Sacrifice the Seat of them, the Body it self, to preserve the Satisfaction of being Chaste. Nor are they onely the Dictates of Obedience that we comply with in this Study, but those

those of Gratitude; and that it is a Vertue that has so powerful an Ascendant upon Ingenious Minds, that those, whose Principles and Aims were not elevated by Religion, have, in acknowledgment to their Parents and their Countrey, courted the greatest Hardships, and Hazards, and Sufferings, as if they were as great Delights and Advantages. And a grateful Person spends no part of his Life to his greater satisfaction, than that which he ventures or employs for those to whom he is obliged for it; and oftentimes finds a greater Contentment even in the difficultest Acknowledgments of a favour, than he did in Receiving of it.

Another Advantage, and that no mean one, that may accrue from the Contemplation of Theological Truths, is, the Improvement of the Contemplator himself in point of Piety and Virtue. For, as the Gospel is styl'd, *The mystery of godliness*; and St. Paul elsewhere calls what it teaches, *The truth which is according to godliness*, that is, a Doctrine fram'd and fix'd to promote the Interest of Piety and Virtue in the World: so

this

1 Tim.

iii. 16.

Tit. 1. 1.

this Character and Encomium belongs (though perhaps not equally) to the more Reti'd Truths discover'd by Speculation, as well as to those more Obvious ones, that are familiarly taught in Catechisms and Confessions of Faith. I would by no means lessen the Excellency and Prerogatives of Fundamentals; but, since the grand and noblest Engagements to Piety and Virtue, are a high Veneration for God and his Christ, and an ardent Love of them; I cannot but think, that those *particular Inquiries, that tend to make greater Discoveries of the Attributes of God, of the Nature, and Offices, and Life of our Saviour, and of the Wisdom and Goodness they have display'd in the Contrivance and Effecting of Man's Redemption, do likewise tend to Increase our Admiration, and Inflame our Love, for the Possessors of such Divine Excellencies, and the Authors of such invaluable Benefits.* And as the Brazen Serpent, that was but a Type of one of the Gospel Mysteries, brought Recovery to those that look'd up to it; so the Mysteries themselves, being duly consider'd, have

have had a very Sanative Influence on many that contemplated Them. Nor is it likely, that he that discerns more of the depth of Gods Wisdom and Goodness, should not, *ceteris paribus*, be more disposed than others to Admire him, to Love him, to Trust him, and so to resign up himself to be Governed by him : Which frame of mind *both* is it self a great Part of the Worship of God, and *doth* directly tend to the Production and Increase of those Vertues, without the practise of which, the Scripture plainly tells us, that we can neither Obey God, nor express our Love to him. And from this Bettering of the mind by the study of Theology, will flow (to add that upon the by) another Benefit, namely, that by giving us a higher value for God and his Truths, it will endear Heaven to us, and so not onely assist us to come Thither, but heighten our Felicity There.

I know it may be said, that the Melioration of the mind is but a Moral Advantage. But give me leave to Answer, that, besides that 'tis such a

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Moral

Moral Advantage as supposes an Intellectual Improvement whose fruit it is, a Moral Benefit may be great enough, even in the Judgment of a meer Philosopher, and an *Epicurean*, to deserve as much study as Natural Philosophy it self. And that you may not think that I speak this onely, because I write in this Epistle as a Friend to Divines, I will tell you, that *Epicurus* himself, who has now adays so numerous a Sect of Naturalists to follow him, studied Physicks, and writ so many Treatises about them for this End, that by knowing the Natural Causes of Thunder, Lightning, and other dreadful *Phenomens*, the Mind might be freed from the disquieting Apprehensions Men commonly had, that such strange and formidable things proceeded from some incensed Deity, and so might trouble the Mind, as well as the Air. This account I have been giving of *Epicurus* his Design, is but what seems plainly enough intimated by his own words, preserved us by *Laertius*, near the end of his Physiological Epistle to *Herodotus*, where recommending to him

Diogenis
Laertii
libr. 10.

him the consideration of what he had delivered about Physical Principles in general, and Meteors in particular, he subjoyns, *Si enim ab istis non discesserimus, tum id unde oritur perturbatio, quodque metum ingerit, recta cum ratione edisseremus, nosque ab ipsis eximemus.* And to this in the close of his Meteorological Epistle to Pythoëles, his best Interpreter, Gassendus, makes him speak consonantly, in these words, *Maxime verò de te ipsum speculationi Principiorum, ex quibus constant omnia, & Infinitatis Naturæ, aliorumque his coherentium Insuper verò & Criteriorum, affectuumque animi, & scopum illius in quem ista edisserentes collineavimus, attende, Tranquillitatem intelligo statumque mentis imperturbatum.* But this is not all the Testimony I can give you from Epicurus himself to the same purpose, for among his *Rate Sententiæ*, preserved us by Laertius, (himself reputed an Epicurean) I find one that goes further; *Si nihil* (says he) *conturbaret nos quod suspicamur, veremurque ex rebus sublimibus, neque item quod ex ipsa morte, ne quando nimirum ad nos pertineat aliquid, ac*

nosse præterea possemus, qui Germani
 fines dolorum atque cupiditatum sint
 (ἐν αὐτῇ περὶ δεινότητος φυσιολογίας)
 nihil Physiologiā indigeremus. Thus
 far the testimony of Epicurus, of
 whose mind though I am not at all,
 as to what he would intimate, *That
 Physiology is either proper to free the
 Mind from the Belief of a Provident
 Deity, and the Souls Immortality, or
 fit for no other considerable purposes;*
 yet this use we may well make of
 these Declarations, that, in Epicurus's
 opinion, a Moral Advantage that re-
 lates to the Government of the Affe-
 ctions, may deserve the pains of ma-
 king Inquiries into Nature. And
 since it hence appears, that a meer
 Philosopher, who admitted no Pro-
 vidence, may think it worth his pains,
 to search into the abstrusest parts of
 Physicks, and the difficultest *Phæno-
 men*a of Nature, onely to ease him-
 self of one troublesome Affection,
Fear; it need not be thought Unphi-
 losophical, to prosecute a Study, that
 will not onely Restrain One undue
 Passion, but Advance All Vertues,
 and free us from all *Servile* Fears of
 the

the Deity; and tend to give us a strong and well-grounded Hope in Him; and make us look upon Gods greatest Power, not with Terrour, but with Joy.

There is yet another Advantage belonging to the study of Divine Truths, which is too great to be here pretermitted. For whereas there is scarce any thing more incident to us whilst we inhabit our (*Batté Chémer*) Job iv. 19. Cottages of Clay, and dwell in this vale of tears, than Afflictions; it ought not a little to endeavor to us the newly mention'd Study, that it may be easily made to afford us very powerful Consolations in that otherwise uneasy state.

I know it may be said, that the Speculations about which the Naturalist is busied, are as well pleasing Diversions, as noble Employments of the Mind. And I deny not that they are often so, when the Mind is not hinder'd from applying it self attentively to them; so that Afflictions slight and short may well be weather'd out by these Philosophical Avocations; but the Greater and Sharper

sort of Afflictions, and the approaches
 of Death, require more powerful Re-
 medies, than these Diversions can
 afford us. For in such cases, the
 Mind is wont to be too much dis-
 compos'd, to apply the attention re-
 quisite to the finding a pleasure in
 Physical Speculations, and in Sick-
 nesses, the Soul is oftentimes as in-
 dispos'd to relish the Pleasures of
 merely Humane Studies, as the lan-
 guishing Body is to relish those Meats,
 which at other times were delightful.
 And there are but few that can take
 any great pleasure to study the World,
 when they apprehend themselves to
 be upon the point of being driven out
 of it, and in danger of losing all
 their share in the Objects of their
 Contemplation. It will not much
 qualifie our Sense of the burning
 heat of a Fever, or the painful
 gripes of the Cholick, to know, *That*
the three Angles of a Triangle are equal
to two Right ones; or that Heat is not
 a real Quality (as the Schools would
 have it,) but a Modification of the
 Motion of the Insensible parts of
 Matter; and Pain not a Distinct, in-
 herent

Herent Quality in the things that produce it, but in an Affection of the Sentiment. The Naturalists Speculations afford him no Consolations, that are extraordinary in, or peculiar to, the state of Affliction; and the Avocations they present him with, do rather Amuse the mind from an Attention to lesser Evils, than bring it any Advantages to Remove or Compensate them, and so work rather in the nature of Opiates, than of true Cordials.

But now if such a Person as Dr. N. falls into Adversity, the case is much otherwise; for we must consider, that when the study of Divine things is such as it ought to be, though it has in it self, or in the Nature of the Employment, be an Act or exercise of Reason; yet being apply'd to, out of Obedience, and Gratitude, and Love to God, it is upon the account of its Motives, and its Aim, an Act of Religion; and as it proceeds from Obedience, and Thankfulness, and Love to God, so it is most acceptable to him; and upon the account of his own Appointment, as well as Good-

ness, is a most proper and effectual means of obtaining his Favour, and then I presume, it will easily be granted, that he who is so happy as to enjoy That, can scarce be made miserable by Affliction. For not now to enter upon the Common-place of the Benefits of Afflictions to them that love God, and to them that are lov'd by him, it may suffice, that he who (as the Scripture speaks) *knows our frame*, and has promised those that are his, that they shall not be *Over-burden'd*, is dispos'd and wont to give his afflicted Servants, both extraordinary Comforts in Afflictions, and Comforts appropriated to that state. For though Natural Philosophy be like its brightest Object, the Stars, which, however the Astronomer can with pleasure Contemplate them, are unable, being meer Natural Agents, to afford him a kinder Influence than usual, in case he be cast upon his Bed of Languishing, or into Prison; yet the Almighty and Compassionate Maker of the Stars, being not onely a Voluntary, but the most Free, Agent, can soon

and

Psal. ciiij.
14.

1 Cor.
xv. 13.

and proportion his Reliefs to our Necessities, and alleviate our heaviest Afflictions by such supporting Consolations, that not onely they can never surmount our Patience, but are oftentimes unable so much as to hinder our Joy, and when Death, that *King of Terrors*, presents it self, Job xviii,
14. whereas the meer Naturalist sadly expects to be depriv'd of the pleasure of his knowledge by losing *those* Senses and that World, which are the Instruments and the Objects of it; and perhaps (discovering beyond the Grave nothing but either a state of Eternal Destruction, or of Eternal Misery,) fears either to be Confin'd for ever to the Sepulchre, or expos'd to Torments that will make even such a Condition desirable; the pious Student of Divine Truths, is not onely freed from the wracking Apprehensions of having his Soul reduc'd to a state of Annihilation, or cast into Hell, but enjoys a comfortable expectation of finding far greater Satisfaction than ever in the Study he now rejoyces to have pursu'd; since the change, that is so justly formidable

to others, will but bring him much nearer to the Divine Objects of his devout Curiosity, and strangely Elevate and Inlarge his Faculties to apprehend them.

And this leads me to the mention of the *last* Advantage belonging to the study I would persuade you to, and indeed, the *bighest* Advantage that can recommend Any Study, or invite Men to any Undertaking; for this is no less than the Everlasting fruition of the Divine Objects of our Studies hereafter, and the comfortable Expectation of it here. For the employing of ones time and parts, to admire the Nature and Providence of God, and contemplate the Divine Mysteries of Religion, as it is one of the chief of those Homages and Services, whereby we Venerate and Obey God; so it is one of those, to which he hath been pleased to appportion no less a Recompence, than (that which can have no greater) the Enjoyment of Himself. The Saints and Angels in Heaven have divers of them been employ'd to convey the Truths of Theology, and are solicitous to look into those Sacred Mysteries;

Dan. ix.
21, 22.
Luke j.
11, 26.
Acts x.
4, 5, 6.
1 Pet. j.
12.

Mysteries; and God hath been pleased to appoint, that those men who study the same Lessons that they do here, shall study them in their company hereafter. And doubtless, though Heaven abound with unexpressible Joys, yet it will be none of the least that shall make up the Happiness even of that Place, that the Knowledge of Divine things, that was here so zealously Pursu'd, shall there be complearily Attain'd. For those things that do here most excite our Desires, and quicken the Curiosity and Industry of our Searches, will not onely there Continue, but be Improv'd to a far greater measure of Attractiveness and Influence. For all those Interests, and Passions, and Lusts, that here below either hinder us from clearly Discerning, or keep us from sufficiently Valuing, or divert us from attentively enough Considering, the Beauty and Harmony of Divine Truths, will there be either abolish'd, or transfigur'd: And as the Object will be Unveil'd; so our Eye will be Enlighten'd, that is, as God will there disclose those worthy Objects of the Angels Curiosity, so he

he will Inlarge our Faculties, to enable us to gaze without being dazl'd upon those sublime and radiant Truths, whose Harmony as well as Splendor we shall be then qualifi'd to Discover, and consequently with Transports to Admire. And this Enlargement and Elevation of our Faculties, will, proportionably to its own measure, Increase our Satisfaction at the Discoveries it will enable us to make. For Theology is like a Heaven, which wants not more Stars than appear in it, but we want Eyes, quick-sighted and piercing enough to reach them. And as the Milky Way, and other Whiter parts of the Firmament, have been full of Immortal Lights from the beginning, and our new Telescopes have not plac'd, but found them, there; so, when our Saviour, after his glorious Resurrection, instructed his Apostles to teach the Gospel, 'tis not said that he alter'd any thing in the Scriptures of Moses and the Prophets, but onely *open'd and enlarg'd their Intellects, that they might understand the Scriptures:* And the Royal Prophet makes it his Prayer, *That God would be pleased to open*

Luke

xxiv. 45.

Psal. cxix.

18.

open his eyes, that he might see wonderful things out of the Law; being (as was above intimated) so well satisf'd, that the Word of God wanted not Admirable things, that he is onely solicitous for the Improvement of his own Eyes, that they might be qualify'd to discern them.

I had almost forgotten one particular, about the Advantages of Theological Studies, that is too considerable to be left unmention'd: For as great as I have represented the Benefits accruing from the Knowledge of Divine Truths; yet to endear them to us, it may be safely added, that, to procure us these Benefits, the actual Attainment of that Knowledge is not always absolutely Necessary, but a hearty Endeavour after it may suffice to entitle Us to them. The patient Chymist, that consumes himself and his Estate in seeking after the Philosophers Stone, if he miss of his Idoliz'd *Elixir*, had as good, nay better, have never sought it, and remains as poor in Effect, as he was rich in Expectation. The Husbandman that employs his Seed and Time, to obtain from the Ground

Ground a plentiful Harvest, if, after all, an unkind Season happen, must see his toil made fruitless;

—— *longique perit labor irritus Anni.*

Too many Patients, that have punctually done and suffer'd for Recovery all that Physicians could prescribe, meet at last with Death in stead of Health. You know what entertainment has been given by skilful Geometricians to the laborious endeavours, even of such famous Writers as *Scaliger*, *Longomontanus*, and other *Tetragonists*; and that their Successor *Mr. Hobbs*, after all the ways he has taken, and those he has propos'd, to Square the Circle, and Double the Cube, by missing of his end, has, after his various attempts, come off, not onely with Disappointment, but with Disgrace. And (to give an Instance even in things Celestial) how much pains has been taken to find out Longitudes, and make Astrological Predictions with some certainty, which for want of coming up to what they aimed at, have been useless, if not pre-

prejudicial to the Attempters.

But God (to speak with *St. Paul* on *Acts xvij.*
 another occasion) *that made the world,*
and all things therein, and is Lord of
heaven and earth, seeks not our Ser-
 vices, as though He *needed any thing,*
seeing he giveth Life, and Breath, and
all things: His Self-sufficiency and
 Bounty are such, that He seeks in our
 Obedience the Occasions of rewarding
 it, and prescribes us Services, because
 the Practise of them is not onely suta-
 ble to our Rational Nature, but such
 as will prevail with his Justice, to let
 His Goodness make our Persons hap-
 py. Agreeably to this Doctrine we
 find in the Scripture, that *Abraham* is
 said to have been *justified by faith,*
when he offered his son Isaac upon the
Altar, (though he did not Actually
 sacrifice him) because he endeavour'd
 to do so; although, God graciously
 accepting the Will for the Deed, ac-
 cepted also of the blond of a Ram in-
 stead of *Isaac's.* And thus we know,
 that 'twas not *David,* but *Solomon*
 that built the Temple of *Hierusalem,*
 and yet God says to the former of those
 Kings (as we are told by the latter)

Acts xvij.
 24, 25.

Jam. ij.
 21.

For-

2 Chron. *Forasmuch as it was in thine heart to*
 .vj. 8, 9. *build an House for my name, thou didst*
well in that it was in thine heart; not-
withstanding thou shalt not build the
House, &c. And if we look to the
 other Circumstances of this Story, as
 2 Sam. they are delivered in the Second Book
 vij. of *Samuel*, we shall find, that upon
David's declaration of a design to
 build God an house, God himself
 vouchsafes to honour him, as he once
 did *Moses*, with the peculiar Title of
 ver. 5. *His Servant*; and commands the Pro-
 ver. 11. phet to say to him, *Also the Lord tells*
thee, that He will make Thee an House:
 To which is added one of the graci-
 onest Messages that God ever sent to
 any particular man. By which we may
 learn, that God approves and accepts
 even those Endeavours (of his Ser-
 vants) if they be real and sincere, that
 never come to be actually accom-
 plished: Good Designs and Endeavours
 are our part, but the events of
 those, as of all other things, are in the
 All-disposing hand of God, who, if we
 be not wanting to what lies in us, will
 not suffer us to be Losers by the de-
 feating Dispositions of his Providence,
 but

but crown our endeavours either with
Success, or with some other *Recom-*
pence, that will keep us from being
 Losers by missing of that. And in-
 deed, if we consider the great *Elogies*
 that the Scripture, as well frequently
 as justly, gives God's Goodness (which
 it represents as *Over*, or as *Above*, *Hab. j. 13.*
all his Works) and that his *purser eyes*
 punish, as well as See, the Murder and
 Adultery of the heart, when those
 Intentional sins are hinder'd from ad-
 vancing into Actual ones; we can
 scarce doubt but He, whose Justice
 punishes sinful Aims, will allow his In-
 finite Goodness to recompense pious
 Attempts: And therefore our *Saviour* *Matth. v.*
 pronounces them blessed, that *hunger*
and thirst after righteousness, assuring
 Them that they shall be *satisfi'd*, and
 thereby sufficiently intimating to us,
 That an earnest Desire after a Spiritu-
 al Grace (and such is the knowledge
 of Divine things) may entitle a man
 to the complete Possession of it, if
 not in This life, yet in the Next
 where we shall not any more *walk by* *2 Cor. v.*
Faith, but by Sight, and obtain as well *7.*
 a Knowledge as other Endowments,
 I besitting

Luke xx.
36.

besitting that Glorious state, wherein the Purchaser of it for Us, assures us, that we shall be [ἰσάγγελοι] *equal, or like to the Angels.*

The Considerations, Sir, I have hitherto laid before you, to recommend the *Study* of Divine Truths, have, I hope, perswaded you, That 'tis on many accounts both *noble and eligible in it self*; and therefore I shall here conclude the First Part of this Discourse. And in regard that the Undervaluation *Physiophilus* expresses for that excellent Employment; seems to flow (chiefly at least) from his fondness and partiality for Natural Philosophy; it will next concern us to *compare* the study of *Theology* with that of *Physicks*, and show, that the Advantages which your Friend alledges in favour of the Latter, are *partly* much lessen'd by disadvantageous Circumstances, and partly much out-weigh'd by the Transcendent Excellencies of Theological Contemplations: The study whereof will thereby appear to be not onely *Eligible* in it self, but *Preferrible* to its Rival. And I must give you warning to expect to find the Second Part,

Part, which the making this Comparison challenges to it self, a good deal more Prolix than the First; not onely because it often requires more trouble, and more words to detect and disprove an Errour, than to make out a Truth; but also because that divers things tending to the Credit of Divinity, and which consequently might have been brought into the First Part of this Discourse, were thought more fit to be interwoven with other things, in the Answers made to the Objections examin'd in the Second.

But which the making this Comp-
 mon challenge is felt a good deal
 more than the Park and early
 because it often comes more in the
 day and more women are made to
 have an error than is met with
 in the Park. But the same is the case
 in the Park of the Order of the
 day and when the same is the case
 have been brought into the Park
 of the Order of the day and when
 the case is brought into the Park
 in the Park of the day and when
 one examines in the Park of the day

**THE EXCELLENCY
OF
THEOLOGY:**

OR,
*The Præminence of the Study of
Divinity, above that of Na-
tural Philosophy.*

THE SECOND PART.



Shall, without Pre-
amble, begin this
Discourse, by
considering the
Delightfulness of
Physicks, as the
main thing that
inveigles your
Friend, and divers other *Virtuosi*, from
relishing, as they ought, and other-

wise would, the pleasantness of Theological Discoveries. And to deal ingenuously with you, I shall not scruple to acknowledge, that though the Address I have made to Nature has lasted several years, and has been toilsome enough, and not unexpensive; yet I have been pleas'd enough with the favours, such as they are, that she has from time to time accorded me, not to complain of having been unpleasantly employ'd. But though I readily allow the attainments of Naturalists to be able to give Philosophical Souls sincerer Pleasures, than those that the more undiscerning part of Mankind is so fond of; yet I must not therefore allow them to surpass, or even equal, the Contentment, that may accrue to a Soul qualified by Religion, to relish the best things most from some kind of Theological Contemplations.

This, I presume, will sufficiently appear, if I shew you, that the Study of Physiology is not unattended with considerable Inconveniencies, and that the pleasantness of it may be, by a Person studious of Divinity, enjoy'd with endearing Circumstances.

But before I name any of the particular

ticular Reasons that I am to represent,
 I fear it may be requisite to inter-
 pose a few words, to obviate a mi-
 stake, which, if not prevented, may
 have an ill aspect, not onely upon the
 first Section, but upon a great part of
 the following Discourse. For I know
 that it may be said, that whereas I
 alledge divers things, to lessen the
 lately mentioned delightfulness of the
 study of Physic, and to depreciate
 some other advantages, by which the
 following Sections would recommend
 it, some of the same things may be
 objected against the delightfulness of
 the study of Divinity. But this Ob-
 jection will not, I presume, much
 move you, if you consider the argu-
 ment and scope of the two parts of
 this Letter. For in the former I have
 shewn by positive Proofs, that the
 study of Theology is attended with
 divers advantages, which belong to it,
 either *onely* as some of them do, or
principally as others. And now in the
 second part I come to consider, whe-
 ther what is alledged in behalf of the
 study of Philosophy, deserve to coun-
 ter-balance, those Prerogatives or
 Advantages; and therefore it neither

need be, nor is my design, to compare, for instance, the delightfulness of the two studies, Philosophy and Physicks, but by shewing the Inconveniences that allay the latter, to weaken the Argument that is drawn from that delightfulness, to conclude it preferable to the study of Theology. So that my work, in this and the following Sections, is, not so much to institute Comparisons, as to obviate or answer Allegations. For since I have in the past Discourse grounded the Excellency of the study of Divinity, chiefly upon those great advantages that are peculiar to it, my Reasonings would not be frustrated, though it should appear, that in point of Delightfulness, Certainty, &c. that Study should, in many cases, be liable to the same Objections with the Study of Nature, since 'tis not mainly for these Qualities, but, as I was saying, for other and peculiar Excellencies that I recommended Divinity. And therefore, supposing the Delightfulness, &c. of that and of Physicks, to be allayed by the same, or equal Inconveniences or Imperfections, that Supposition would not hinder the

Scales

Scales to be swayed in favour of Divinity, upon the score of those Advantages that are unquestion'd, and peculiarly belong to it. I know not whether I need add, that, notwithstanding this, you are not to expect, that I should give Philosophy the wounds of an Enemy. For my design being not to discourage you, nor any Ingenious man, from courting Her *at all*, nor from courting Her *much*, but from courting her *too much*, and despising Divinity for her, I employ against her not a Sword to wound her, but a Ballance, to shew, that her Excellencies, though solid and weighty, are less so, than the preponderating ones of Theology. And this temper and purpose of mine renders my Task difficult enough to have, perhaps, some right to your pardon, as well as some need of it, if I do not everywhere steer so exactly, as equally to avoid injuring the Cause I am to plead for, and disparaging a Study, which I would so little depreciate, that I allow it a great part of my Inclinations, and not a little share of my Time. And having said this, to keep the Design of this Discourse from being misunderstood,

derstood, I hope we may now proceed to the particulars, whose scope we have been declaring.

Returning then to what I was about to say before this long, but needful, Advertisement interrupted me, I shall resume my Discourse of the Delightfulness of the Study of Physicks, about which I was going in the first place to tell you, that I know you and your Friend will freely grant me, that the knowledge of the empty and barren Physiology, that is taught in the Schools, as it exacts not much pains to be acquir'd, so it affords but little satisfaction when attain'd. And as I know you will give me leave to say this; so, being warranted by no slight experience of my own, I shall take leave to say also, that the study of that Experimental Philosophy, which is that whereof your Friend is so much enamour'd, is, if it be duly prosecuted, a very troublesome and laborious Employment. For, (to mention at present but This) that great variety of Objects the Naturalist is not onely by His Curiosity, but by Their secret dependances upon one another, engag'd to consider, and several

several ways to handle, will put him upon needing, and consequently upon applying himself to such a Variety of Mechanick People, (as Distillers, Drugsters, Smiths, Turners, &c.) that a great part of his time, and perhaps all his Patience, shall be spent in waiting upon Trades-men, and repairing the losses he sustains by Their disappointments, which is a Drudgery greater than any, who has not try'd it, will imagine, and which yet being as inevitable as unwelcome, does very much counter-balance and allay the Delightfulness of the Study we are treating of. In which so great a part of a mans care and time must be laid out in providing the *Apparatus*'es necessary for the trying of Experiments.

But this is not all. For when you have brought an Experiment to an Issue, though the Event may often prove such as you will be pleas'd with; yet it will seldome prove such as you can acquiesce in. For it fares not with an Inquisitive mind in studying the Book of Nature, as in reading of *Aesop's* Fables, or some other collection of Apologues of differing sorts, and inde-

independant one upon another; where
 when you have read over as many at
 one time as you think fit, you may
 leave off when you please, and go
 away with the pleasure of understand-
 ing those you have perus'd, without
 being solicited by any troublesome
 Itch of Curiosity to look after the rest,
 as those which are needful to the bet-
 ter understanding of those you have
 already gone over, or that will be ex-
 plicated *by* them, and scarce *without*
 them. But in the Book of Nature, as
 in a well contriv'd Romance, the parts
 have such a connection and relation
 to one another, and the things we
 would discover are so darkly or in-
 compleatly knowable by those that
 precede them, that the mind is never
 satisfied till it comes to the end of the
 Book; till when all that is discover'd
 in the progress, is unable to keep the
 mind from being molested with Im-
 patience to find that yet conceal'd,
 which will not be known till one does
 at least make a further progress. And
 yet the full discovery of Natures My-
 steries, is so unlikely to fall to any
 mans share in this Life, that the case
 of the Pursuers of them is at best like
 theirs,

theirs, that light upon some excellent
 Romance, of which they shall never
 see the latter parts. For indeed (to
 speak now without a *Simile*) there is
 such a Relation betwixt Natural Bo-
 dies, and they may in so many ways
 (and divers of them unobserv'd) work
 upon, or suffer from, one another, that
 he who makes a new Experiment, or
 discovers a new *Phænomenon*, must
 not presently think, that he has dis-
 cover'd a new Truth, or detected an
 old Error. For, (at least if he be a con-
 sidering man) he will oftentimes find
 reason to doubt, whether the Expe-
 riment or Observation have been so
 skilfully and warily made in all cir-
 cumstances, as to afford him such an
 Account of the matter of fact, as a
 severe Naturalist would desire. And
 then, supposing the Historical part
 no way defective, there are far more
 Cases than are taken notice of, where-
 in so many differing Agents may pro-
 duce the exhibited *Phænomenon*, or
 have a great Influence upon the Ex-
 periment or Observation, that he must
 be less jealous than becomes a Phi-
 losopher, to whom Experiments doe
 not oftentimes as well suggest new
 doubts,

doubts, as present new *Phænomena*.

And even those Trials, that end in real Discoveries, do, by reason of the connection of Physical Truths, and the relations that Natural Bodies have to one another, give such hopes and such desires of improving the Acquists we have already made, to the explicating of other Difficulties, or the making of further Discoveries, that an Inquisitive Naturalist finds his work to increase daily upon his hands, and the event of his past Toils, whether it be good or bad, does but engage him into new ones, either to free himself from his scruples, or improve his successes. So that, though the pleasure of making Physical Discoveries, is, in it self consider'd, very great; yet this does not a little impair it, that the same attempts which afford that delight, do so frequently beget both anxious Doubts, and a disquieting Curiosity. So that, if knowledge be, as some Philosophers have styl'd it, the Aliment of the Rational Soul, I fear I may too truly say, that the Naturalist is usually fain to live upon Sallads and Sauces, which though they yield some nourishment, excite more appe-
tite

tite than they satisfy, and give us indeed the pleasure of eating with a good stomach, but then reduce us to an unwelcome necessity of always rising hungry from the Table.

Of divers things, that lessen the Delightfulness of Physiological Studies, I do so amply discourse in other Papers, that I might well remit you thither; but indeed it is not necessary that I should insist on this Argument any further. 'Tis true, that such a Reference might be very proper, if the Mysteries of Theology and Physick were like those of Theology and Necromancy, or some other part of unlawful Magick, whereof the former could not be well relish'd without an abhorrence of the latter. But as the two great Books, of Nature and of Scripture, have the same Authour; so the study of the latter does not at all hinder an Inquisitive man's delight in the study of the former. The Doctor I am pleading for, may as much relish a Physical Discovery, as *Physophilus*; nay, by being addicted to Theology and Religion, he is so far from being incapable of the contentments accruing from the study of Nature,

Nature, that beside those things that recommend it to others, there are several things that peculiarly endear it to Him.

For 1. he has the contentment to look upon the wonders of Nature, not onely as the Productions of an admirably wise Author of things, but of such an one as he intirely honours and loves, and to whom he is related. He that reads an excellent Book, or sees some rare Engine, will be otherwise affected with the sight or the perusal, if he knows it to have been made by a Friend, or a Parent, than if he considers it but as made by a stranger, whom he has no particular reason to be concern'd for. And if *Rehoboam* did not as well degenerate from the sentiments of Mankind, as from his Family, he could not but look upon that Magnificent Temple of *Solomon* with another Eye, than did the throngs of Strangers that came onely to gaze at it, as an admirable piece of Architecture, whilst he consider'd that 'twas his Father that built it. And if (as we see) the same Heroick Actions, which we read in History, of some great Monarch, that strangers barely
and

and unconcernedly admire; the Natives of his Countrey do not onely venerate, but affectionately interest themselves therein, because they are his Countrey-men, and their Ancestors were his Subjects: How much may we suppose the same Actions would affect them, if they had the honour to be that Prince's Children? We may well therefore presume, that 'tis not without a singular satisfaction, that the Contemplator, we are speaking of, does in all the Wonders of Nature discover, how wise, and potent, and bountiful that Author of Nature is, in whom he has a great Interest, and that so great an one, as both to be admitted into the number of his Friends, and adopted into the number of his Sons, and is thereby in some measure concern'd in all the Admirations and Praises, that are paid either by himself or others, to those Adorable Attributes that God has displayed in that great Master-piece of Power and Wisdom, the World. And when he makes greater discoveries in these Expresses and Adumbrations of the Divine Perfections, the delightfulness of his Contemplation is proportionably

nably increas'd upon such an Account, as that, which indears to the passionate Lover of some charming Beauty an Excellent, above an Ordinary, Picture of her; because that the same things that make him, as it does other Gazers, look upon it as a finer piece, make Him look upon it as the more like his Mistress, and thereby entertain him with the sublimer Idea's of the belov'd Original; to whose transcendent Excellencies he supposes that the Noblest Representations must be the most resembling.

And there is a farther Reason, why our Contemplator should find a great deal of contentment in these Discoveries. For we have in our nature so much of Imperfection, and withall so much of Inclination to self-love, that we do too confidently proportion our Idea's of what God can do for us, to what we have already the knowledge or the possession of. And though, when we make it our business, we are able with much ado somewhat to enlarge our apprehensions, and raise our expectations beyond their wonted pitch; yet still they will be but scantily promoted and heightned, if those things

things themselves be but mean and ordinary, which we think we have done enough if we make them surpass. A Countrey Villager, born and bred in a homely Cottage, cannot have any suitable apprehensions of the Pleasures and Magnificence of a great Monarch's Court. And if he should be bid to scue up his Imagination to frame Idea's of them, they would be borrow'd from the best Tiled House he had seen in the Market-towns where he had sold his Turnips or Corn, and the Wedding-feast of some neighbouring Farmers Daughter. And though a Child in the Mother's womb had the perfect use of Reason, yet could it not in that dark Cell have any Idea's of the Sun or Moon, or Beauties or Banquets, or Algebra or Chymistry, and many other things, which his Elder Brothers, that breath fresh Air, and freely behold the Light, and are in a more mature Estate, are capable of knowing and enjoying. Now among Thinking men, whose thoughts run much upon that future state which they must shortly enter into, but shall never pass out of, there will frequently and naturally arise a

distrust, which though seldome own'd, proves oftentimes disquieting enough. For such men are apt to question, how the future condition which the Gospel promises, can afford them so much happiness as it pretends to; since they shall in Heaven but Contemplate the Works of God, and praise him, and converse with him, all which they think may, though not immediately, be done by men here below, without being happy: But he that by Telescopes and Microscopes, dexterous Dissections, and well imploy'd Furnaces, &c. discovers, the wondrous power and skill of him that contriv'd so vast and immense a Mass of Matter, into so curious a piece of Workmanship as this World, will pleasingly be convinc'd of the boundless power and goodness of the great Architect. And when he sees how admirably every Animal is furnish'd with parts requisite to his respective nature; and that there is particular care taken, that the same Animal, as for example, Man, should have differing provisions made for him according to his differing states within the womb, and out of it, (a humane Egg, and an Embryo, being

being much otherwise nourished and fitted for action, than is a (complete) Man ;) He, I say, who considers this, and observes the stupendious Providence, and excellent Contrivances, that the curious Priors into Nature (and none but they) can discover, will be as well enabled as invited to reason thus within himself: That sure God, *who* has with such admirable Artifice fram'd Silk-worms, Butterflies, and other meaner Insects, and with such wonderful providence taken care, that the nobler Animals should as little want any of all the things requisite to the completing of their respective Natures ; and *who*, when he pleases, can furnish some things with Qualifications, quite differing from those which the knowledge of his other works could have made us imagine, (as is evident in the Load-stone and in Quick-silver among Minerals, and the Sensitive Plant among Vegetables, the Camellion among Animals, &c.) This God, I say, must needs be fully able to furnish those he delights to honour, with Objects suitable to their improv'd Faculties, and with all that is requisite to the Happiness he

intends them in their glorifi'd state; and is able to bring this to pass by such amazing contrivances, as perhaps will be quite differing from any, that the things we have yet seen suggest to us any Idea's of. And sure he, that has in so immense, so curious, and so magnificent a Fabrick, made such provision for Men, who are either desperately wicked, or but very imperfectly good, and in a state where they are not to Enjoy happiness, but by Obedience and Sufferings to Fit themselves for it, may safely be trusted with finding them in Heaven Employments and Delights becoming the Felicity he designs them There; as we see that here below, he provides as well for the soaring Eagle, as for the creeping Caterpillar, (and is able to keep the Ocean as fully supply'd with Rivers, as Lakes or Ponds are with Springs and Brooks.) And as a state of Celestial happiness is so great a Blessing, that those things that afford us either greater assurances, or greater foretastes of it, are of the number of the greatest Contentments and Advantages, that short of It we can enjoy; so 'tis hard for any Divine

to receive so much of this kind of satisfaction, as he who by skillfully looking into the Wonders of Nature, has his apprehensions of God's power and manifold wisdom (as an Apostle calls it) elevated and enlarged. As when the Queen of *Sheba* had particularly survey'd the astonishing Prudence that *Solomon* display'd in the ordering of his Magnificent Court; she transportedly concluded those Servants of his to be happy enough to deserve a Monarchs Envy, that were allowed the Honour and Privilege of a constant and immediate Attendance on him.

Ephes.
iii. 10.

The second Section.

I Doubt not but you have too good an Opinion of your Friend; not to think that you may alledge in his favour, that the chief thing which makes him prefer Physiology to all other kind of knowledge, is, That it enables those who are Proficients in it to do a great deal of good, both by improving of Trades; and by promoting

of Physick it self. And I am too mindful of what I writ to *Pyrophilus*, to deny, either that it can assist a man to advance Physick and Trades, or that, by so doing, he may highly advantage Mankind. And this, I, (who would not lessen your Friends Esteem for Physicks, but onely his Partiality) willingly acknowledge to be so allowable an Endearment of Experimental Philosophy, that I do not know any thing, that to men of a Humane, as well as Ingenious Disposition, ought more to recommend the study of Nature; except the opportunity it affords men to be Just and Grateful to the Author both of Nature and of Man. I do not then deny, that the true Naturalist may very much benefit Mankind; but I affirm, that, if men be not wanting to themselves, the Divine may benefit them much more. It were not perchance either unseasonable, or impertinent to tell you on this occasion, that he who effectually teaches men to subdue their Lusts and Passions, does as much as the Physician contribute to the preservation of their Bodies, by exempting them from those Vices, whose

no less usual than destructive Effects are Wars, and Duels, and Rapines, and Desolations, and the Pox, and Surfers, and all the train of other Diseases that attend Gluttony and Drunkenness, Idleness and Lust; which are not Enemies to Mans Life and Health barely upon a Physical account, but upon a Moral one, as they provoke God to punish them with Temporal as well as Spiritual Judgments; such as Plagues, Wars, Famines, and other publick Calamities, that sweep away a great part of Mankind; besides those personal afflictions of Bodily Sickness, and disquiets of Conscience, that do both Shorten mens Lives, and Imbitter them. Whereas Piety having (as the Scripture assures us) Promises both of this Life, and of that which is to come, those Teachers that make men Virtuous and Religious, by making them Temperate, and Chaste, and Inoffensive, and Calm, and Contented, do not onely procure them great and excellent Dispositions to those Blessings, both of the Right hand and of the Left, which God's Goodness makes him forward to bestow on those, who by Grace and

Virtue

Virtue are made fit to receive them; but do help them to those Qualifications, that by preserving the Mind in a calm and cheerful temper, as well as by affording the Body all that Temperance can confer, do both Lengthen their Lives, and Sweeten them. These things, I say, 'twere not impertinent to insist on, but I will rather chuse to represent to you, That the Benefits which men may receive from the Divine, surpass those which they receive from the Naturalist, both in the Nobleness of the Advantages, and in the Duration of them.

Be it granted then, that the Naturalist may much improve both Physick and Trades, yet since these themselves were devised for the service of the Body, (the one to preserve or restore his Health, and the other to furnish it with Accommodations or Delights,) the boasted use of Natural Philosophy, by its advancing Trades and Physick, will still be to serve the Body; which is but the Lodging and Instrument of the Soul, and which, I presume, your Friend, and which I am sure your self, will be far from thinking the noblest part of Man. I know it
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may be said, nor do I deny it, that di-
 vers Mechanical Arts are highly Be-
 neficial, not onely to the Inventors,
 but to those Places, and perhaps those
 States, where such Improvements are
 found out and cherish'd. But though I
 most willingly grant, that this Consi-
 deration ought to recommend Expe-
 rimental Philosophy, as well to States
 as to private Persons; yet, besides that
 many of these Improvements do ra-
 ther Transfer than Increase Mankind's
 goods, and prejudice one Sort of Men
 as much as they Advantage another,
 (as in the case of the Eastern Spices,
 of whole Trade the *Portugals* and
Dutch by their later Navigations, did,
 by appropriating it to themselves, de-
 prive the *Venetians*) or else does but
 increase that, which, though very Be-
 neficial to the Producers, is not really
 so to Mankind in general: Of which
 we have an Example in the Invention
 of Extracting Gold and Silver out of
 the Oar, with *Mercury*. For though it
 have vastly enrich'd the *Spaniards* in
 the *West Indies*, yet 'tis not of any so-
 lid advantage to the World; no more
 than the Discovery of the *Peruvian*
 and other *American Mines*; by which,
 (espe-

(especially reckoning the multitudes of unhappy men that are made miserable, and destroyed in working them,) Mankind is not put into a better condition than it was before. And if the Philosopher's Stone it self, (supposing there be such a thing) were not an Incomparable Medicine, but were onely capable of transmuting other Metalls into Gold, I should perhaps doubt, whether the Discoverer of it would much advantage Mankind; there being already Gold and Silver enough to maintain Trade and Commerce among men; and for all other purposes, I know not, why a plenty of Iron, and Brass, and Quick-silver, which are far more useful Metalls, should not be more desirable. But not to urge this; we may consider, that these Advancements of enriching Trades do still bring Advantages but to the outward man, and those many Arts and Inventions that aim at the heightning the pleasures of the Senses, belong but to the Body; and even in point of gratifying That, are not so requisite and important, as many suppose: Education, Custome, &c. having a greater Interest than most imagine in the
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relish men have even of Sensitive pleasures. And as for Physick, not to mind you, that it has been Lowdly (how Justly, I here examine not,) complain'd of, that the new Philosophy has made it far greater promises than have yet been perform'd; I shall onely take notice, that since all that Physick is wont to pretend to, is, to preserve health, or restore it, there are multitudes in the world that have no need of the assistance the Naturalist would give the Physician; and a healthy man, as such, is already in a better condition, than the Philosopher can hope to place him in, and is no more advantag'd by the Naturalist's contribution to Physick, than a sound man that sleeps in a whole skin, is by all the fine Tools of a Chirurgeons Case of Instruments, and the various Compositions of his Chest.

And as the Benefits that may be derived from Theology, much surpass those that accrue from Physicks, in the Nobleness of the Subject they relate to; so have they a great advantage in point of Duration. For all the service that Medicines, and Engines, and Improvements can do a man, as they

they relate but to this Life, so they determine with it. Physick indeed and Chymistry do, the one more faintly, and the other more boldly, pretend sometimes not onely to the Cure of Diseases, but the Prolongation of Life: But since none will suspect, but that the Masters of those parts of knowledge would employ their utmost skill to protract their own Lives, those that remember, that *Solomon* and *Helmont* liv'd no longer, than millions that were strangers to Philosophy, and that even *Paracelsus* himself, for all his boasted *Arcana*, is by *Helmont* and other Chymists confessed to have died some years short of 50; we may very justly fear, that Nature will not be so kind to her greatest Votaries, as to give them much more time than other men, for the payment of the last Debt all men owe her. And if a few years respite could by a scrupulous and troublesome use of Diet and Remedies be obtain'd; yet that, in comparison of the Eternity that is to follow, is not at all considerable. But, whereas within no great number of years, (a little sooner, or a little later) all the Remedies, and Reliefs, and Pleasures,

Pleasures, and Accommodations, that Philosophical Improvements can afford a man, will not keep him from the Grave, (which within very few days will make the body of the greatest *Virtuoso* as hideous and as loathsome a Carcase as that of any ordinary man ;) the Benefits that may accrue to us by Divinity, as they relate Chiefly, though not Onely, to the other World ; so they will follow us out of this, and prove then incomparably greater than ever, when they alone shall be capable of being enjoy'd. So that Philosophy, in the capacity we here consider it, does but as it were provide us some little Conveniences for our passage (like some Accommodations for a Cabbin, which out-lasts not the Voyage,) but Religion provides us a vast and durable Estate, or, as the Scripture styles it, an *unshaken Kingdom*, when we are arriv'd at our Journeys end. And therefore the Benefits accruing from Religion, may well be concluded preferable to their Competitors, since they not onely reach to the Mind of Man, but reach beyond the End of Time it self ; whereas all the variety of Inventions

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that Philosophy so much boasts of, as whilst they were in season they were devis'd for the service of the Body, so they make us busie, and pride our selves about things, that within a short time will not (so much as upon Its score) at all concern us.

The third Section.

I Expect you should here urge on your Friends behalf, That the study of Physicks has one Prerogative, (above that of Divinity,) which, as it is otherwise a great Excellency, so does much add to the *Delightfulness* of it. I mean, the Certainty, and Clearness, and the thence resulting Satisfactoriness of our Knowledge of Physical, in comparison of any we can have of Theological matters, whose being Dark and Uncertain, the Nature of the things themselves, and the numerous Controversies of differing Sects about them, sufficiently manifest.

But upon this Subject, divers things are to be consider'd.

For

For first, as to the Fundamental and Necessary Articles of Religion, I do not admit the Allegation, but take those Articles to be both Evident, and capable of a Moral Demonstration. And if there be any Articles of Religion, for which a Rational and Cogent Proof cannot be brought, I shall for that very reason conclude, that such Articles are not absolutely Necessary to be believ'd; since it seems no way reasonable to imagine, that God having been pleased to send not onely his Prophets and his Apostles, but his onely Son into the World, to promulgate to Mankind the Christian Religion, and both to cause it to be consign'd to writing, that it may be known, and to alter the course of Nature by numerous Miracles, that it might be believ'd; it seems not reasonable, I say, to imagine, that he should not propose those Truths, which he in so wonderful and so solemn a manner recommended, with at least so much Clearness, as that studious and well-dispos'd Readers may certainly understand such as are necessary for them to believe.

2. Though I will not here engage

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my self in a Disquisition of the several kinds, or, if you please, Degrees, of Demonstration, (which yet is a Subject that I judge far more considerable than cultivated,) yet I must tell you, that *as* a Moral certainty (such as we may attain about the Fundamentals of Religion) is enough in many cases for a wise man, and even a Philosopher to acquiesce in; *so* that Physical Certainty, which is pretended for the Truths demonstrated by Naturalists, is, even where 'tis rightfully claim'd, but an inferiour kind or degree of certainty, as Moral certainty also is. For even Physical Demonstrations can beget but a Physical Certainty, (that is, a Certainty upon supposition that the Principles of Physick be true,) not a Metaphysical Certainty, (wherein 'tis absolutely impossible, that the thing believ'd should be other than true.) For instance, All the Physical Demonstrations of the Antients about the causes of particular *Phænomena* of Bodies, suppose, that *ex nihilo nihil fit*; and this may readily be admitted in a Physical sense, because according to the course of Nature, no Body can be produc'd out of Nothing, but

but speaking universally it *may* be false, as Christians generally, and even the *Cartesian* Naturalists, asserting the Creation of the World, must believe, that, *de facto*, it *is*. And so whereas *Epicurus* does, I remember, prove, that a Body once dead cannot be made alive again, by reason of the dissipation and dispersion of the Atoms, 'twas, when alive, compos'd of; though all men will allow this assertion to be Physically demonstrable, yet the contrary may be true, if God's Omnipotence intervenes, as all the Philosophers that acknowledge the Authority of the New Testament, where *Lazarus* and others are recorded to have been raised from the dead, must believe, that it actually did appear, and even all unprejudic'd Reasoners must allow it to be Possible, there being no Contradiction impli'd in the Nature of the thing. But how to affirm, that such things as are indeed Contradictories cannot be both true, or, that *factum infectum reddi non potest*, are Metaphysical Truths, which cannot possibly be other than true, and consequently beget a Metaphysical and absolute Certainty. And your Master

Cartesius was so sensible of a dependance of Physical Demonstrations upon Metaphysical Truths, that he would not allow any certainty not onely to them, but even to Geometrical Demonstrations, till he had evinc'd, that there is a God, and that he cannot deceive men that make use of their Faculties aright.

To which I may add, that even in many things that are look'd upon as Physical Demonstrations, there is really but a Moral Certainty. For when, for instance, *Des-Cartes* and other Modern Philosophers, take upon them to demonstrate, That there are divers Comets that are not Meteors, because they have a Parallax lesser than that of the Moon, and are of such a bigness, and some of them move in such a Line, &c. 'tis plain, that divers of these Learned men had never the opportunity to observe a Comet in their Lives, but take these Circumstances upon the credit of those Astronomers that had such Opportunities. And though the Inferences, as such, may have a Demonstrable Certainty, yet the Premisses they are drawn from having but an Historical one, the pre-

presumed Physico-Mathematical Demonstration can produce in a wary mind but a Moral Certainty, and not the greatest neither of that kind that is possible to be attain'd; as he will not scruple to acknowledge, that knows by experience, how much more difficult it is, than most men imagine, to make Observations about such nice Subjects, with the exactness that is requisite for the building of an undoubted Theory upon them. And there are I know not how many things in Physicks, that men presume they believe upon Physical and Cogent Arguments, wherein they really have but a Moral assurance; which is a Truth heeded by so few, that I have been invited to take the more particular notice of them in other Papers, written purposely to show the doubtfulness and incompleatness of Natural Philosophy; of which Discourse, since you may command a fight, I shall not scruple to refer you thither for the Reasons of my affirming here, that the most even of the modern *Virtuosi* are wont to fancy more of Clearness and Certainty in their Physical Theories, than a Critical Examiner will find.

Onely that you may not look upon this as a put off, rather than a reference, I will here touch upon a couple of Subjects, which men are wont to *believe* to be, and which indeed ought to *be*, the most thoroughly understood; I mean the Nature of Body in general, and the Nature of Sensation.

And for the first of these, since we can turn our selves no way, but we are every where environ'd, and incessantly touch'd by Corporeal Substances, one would think that so familiar an Object, that does so assiduously, and so many ways affect our Senses, and for the knowledge of which we need not inquire into the distinct Nature of particular Bodies, nor the properties of any one of them, should be very perfectly known unto us. And yet the Notion of Body in general, or *what it is that makes a thing to be a Corporeal Substance, and discriminates it from all other things*, has been very hotly disputed of, even among the modern Philosophers, & *adhuc sub judice lis est*. And though your Favourite Des-Cartes, in making the nature of a Body to consist in Extension every way, has a notion of it, which is
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more easie to find fault with, than to substitute a better ; yet I fear, 'twill appear to be attended, not onely with *this* Inconvenience, That God cannot, within the compass of this World, wherein if any Body vanish into Nothing, the place or space left behind it must have the three Dimensions, and so be a true Body, *annihilate* the least particle of Matter, at least without, at the same instant and place, *creating* as much, (which agrees very ill with that necessary and continual dependance, which he asserts Matter it self to have on God for its very Being ;) but with *such other* inconveniences, that some Friends of yours, otherwise very inclinable to the *Cartesian* Philosophy, know not how to acquiesce in it : and yet I need not tell you, how Fundamental a Notion the deviser of it asserts it to be. Neither do I see, how this Notion of a Corporeal Substance will any more, than any of the formerly received Definitions of it, extricate us out of the Difficulties of that no less perplexed, than famous Controversie, *de Compositione Continui*. And though some ingenious men, who perhaps perceive

better than others, how intricate it is, have of late endeavour'd to shew, that men need not be solicitous to determine this Controversie, it not being rightly propos'd by the Schoolmen that have started it; and though I perhaps think, that Natural Philosophy may be daily advanc'd without the decision of it, because there is a multitude of considerable things to be discover'd and perform'd in Nature, without so much as dreaming of this Controversie; yet still, *as I would propose the Question*, the Difficulties, till removed, will spread a thick night over the Notion of Body in general. For, either a Corporeal and extended Substance is (either really or mentally) divisible into parts endow'd with Extension, and each of these parts is divisible also into other Corporeal parts, lesser and lesser, *in infinitum*; or else this subdivision must stop somewhere, (for there is no mean between the two members of the Distinction;) and in either case the Opinion pitch'd upon will be liable to those Inconveniences, not to say Absurdities, that are rationally urg'd against it by the maintainers of the Opposite;

Opposite; the Objections on both sides being so strong, that some of the more Candid, even of the Modern Metaphysicians, after having tir'd themselves and their Readers with arguing *Pro* and *Con*, have confess'd the Objections on both sides to be insoluble.

But though we do not clearly understand the Nature of Body in general; yet sure we cannot but be perfectly acquainted with what passes within our selves in reference to the particular Bodies we daily See, and Hear, and Smell, and Taste, and Touch. But alas, though we know but little, save by the Informations of our senses; yet we know very little of the manner by which our Senses informs us. And to avoid prolixity, I will at present suppose with you, that the Ingenious *Des Cartes* and his followers have given the fairest account of Sensation, that is yet extant. Now according to him, a Man's Body being but a well organiz'd Statue, that which is truly called Sensation is not perform'd by the Organ, but by the Mind, which perceives the motion produc'd in the Organ; (for which reason he

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will not allow Brutes to have Sense properly so call'd;) so that if you ask a *Cartesian*, how it comes to pass that the Soul of Man, which he justly asserts to be an immaterial Substance, comes to be wrought upon, and that in such various manners, by those external Bodies that are the objects of our Senses, he will tell you, that by their Impressions on the Sensories, they variously move the Fibres or Threds of the Nerves, wherewith those parts are endow'd, and by which the Motion is propagated to that little Kernel in the Brain, call'd by many Writers the *Conarion*, where these differing motions being perceiv'd by the there residing Soul, become Sensations, because of the intimate union, and, as it were, Permission (as *Cartesius* himself expresses it) of the Soul with the Body.

But now, Sir, give me leave to take notice, that this Union of an Incorporeal with a Corporeal Substance, (and that without a Medium) is a thing so unexampled in Nature, and so difficult to comprehend, that I somewhat question, whether the profound Secrets of Theology, not to say

say the adorable Mystery it self of the Incarnation, be more abstruse than this. For how can I conceive, that a Substance purely immaterial, should be united without a *Physical Medium*, (for in this case there can be none,) with the Body, which cannot possibly lay hold on It, and which It can pervade and flie away from at pleasure, as *Des-Cartes* must confess the Soul actually does in Death. And 'tis almost as difficult to conceive, how any part of the Body, without excepting the Animal Spirits, or the *Canarion*, (for these are as truly Corporeal as other parts of the Humane Statue,) can make Impressions upon a Substance perfectly Incorporeal, and which is not immediately affected by the motions of any other parts, besides the *Genus Nervosum*. Nor is it a small difficulty to a meer Naturalist (who, as such, does not in Physical matters take notice of Revelations about Angels,) to conceive how a finite Spirit can either move, or, which is much the same thing, regulate and determine the motion of a Body. But that which I would on this occasion invite you to consider, is, that supposing the Soul

Soul does in the Brain perceive the differing motions communicated to the outward Senses ; yet this, however it may give some account of Sensation in general, will not at all show us a satisfactory Reason of particular and distinct Sensations. For if I demand, why, for Instance, when I look upon a Bell that is ringing, such a motion or impression in the Conation produces in the mind that peculiar sort of perception, *Seeing*, and not *Hearing* ; and another motion, though coming from the same Bell at the same time, produces that quite differing sort of perception that we call *Sound*, but not *Vision* ; what can be answered, but that it was the good pleasure of the Author of Humane Nature to have it so ? And if the question be ask'd about the differing Objects of any one particular Sense ; as, Why the great plenty of unperturbed Light that is reflected from Snow, Milk, &c, does produce a Sensation of whiteness, rather than redness or yellowness ? Or why the smell of *Cassia*, or *Assa fetida*, produces in most persons that which they call a *Stink*, rather than a *Perfume* ? (especially since

since we know some Hysterical Women, that think it not onely a whole-some, but a pleasing smell.) And if also you further ask, why Melody and sweet things do generally delight us: and discords and bitter things do generally displease us? Nay, why a little more than enough of some Objects that produce pleasure, will produce pain? (as may be exemplifi'd in a cold hand, as it happens to be held out at a just, or at too near a distance from the fire :) If, I say, these, and a thousand other questions of the like kind, be ask'd, the Answer will be but the general one, that is already given, that such is the nature of Man. For to say, that moderate Motions are agreeable to the nature of the Sensory they are excited in, but violent and disorderly ones, (as jarring Sounds, and scorching Heat) do put it into too violent a motion for its Texture; will by no means satisfy. For, besides that this Answer gives no account of the variety of Sensations of the same kind, as of differing Colours, Tastes, &c. but reaches onely to Pleasure and Pain; even as to these, it will reach but a very little way; unless the

Givers

Givers of it can show, how an Immaterial Substance should be more harm'd by the brisker motion of a Body, than by the more languid.

And as you and your Friend think, you may justly smile at the *Aristotelians*, for imagining that they have given a tolerable account of the Qualities of Bodies, when they have told us, that they spring from certain substantial Forms, though when they are ask'd particular Questions about these Incomprehensible Forms, they do in effect but tell us in general, that they have such and such Faculties, or Effects, because Nature, or the Author of Nature, endow'd them therewith, so I hope you will give me leave to think, that it may keep us from boasting of the Clearness and Certainty of our knowledge about the Operations of sensible Objects, whilst, as the *Aristotelians* cannot particularly show, how their Qualities are produc'd, so we cannot particularly explicate, how they are perceiv'd; the principal thing that we can say, being, in substance, this, that our Sensations depend upon such an union or permission of the Soul and Body, as we can give no Example of

in all Nature, nor no more distinct account of, than that it pleased God so to couple them together. But I beg your pardon for having detain'd you so long upon one Subject, though perhaps it will not prove time mis-spent, if it have made you take notice, that in spite of the clearness and certainty, for which your Friend so much prefers Physicks before Theology, we are *Yet* to seek, (I say *Yet*, because I know not what Time may Hereafter discover) both for the Definition of a Corporeal Substance, and a satisfactory account of the manner of Sensation: though without the true Notion of a Body we cannot understand that Object of Physicks in general, and without knowing the Nature of Sensation, we cannot know That, from whence we derive almost all that we know of any Body in particular.

If after all this your Friend shall say, That *Des-Cartes's* account of Body, and other things in Physicks, being the best that men can give, if they be not satisfactory, it must be imputed to Humane Nature not to the *Cartesian* Doctrine, I shall not stay to dispute how far the allegation is true; especially

especially since, though it be admitted,
 it will not prejudice my Discourse.
 For, whatsoever the Cause of the im-
 perfection of our Knowledge about
 Physical matters be, that there is an
 Imperfection in that Knowledge is
 manifest; and that ought to be enough
 to keep us from being puffed up by
 such an imperfect Knowledge, and
 from undervaluing upon its account
 the study of those mysteries of Divi-
 nity, which, by reason of the Noble-
 ness and Remoteness of the Objects,
 may much better than the Nature of
 Corporeal things, (which we see, and
 feel, and continually converse with,)
 have their obscurity attributed to the
 weakness of our humane Understand-
 ings. And if it be a necessary Imper-
 fection of Humane Nature, that, whilst
 we remain in this mortal condition,
 the Soul being confin'd to the dark
 prison of the Body, is capable (as even
Aristotle somewhere confesses) but of a
 dim knowledge; so much the greater
 value we ought to have for Christian
 Religion, since by its means (and by
 no other without it) we may attain a
 condition, wherein, as our Nature will
 otherwise be highly blessed and
 advanced;

advanced; so our Faculties will be Elevated and Enlarged, and probably made thereby capable of attaining degrees and kinds of knowledge, to which we are here but strangers. In favour of which I will not urge the received Opinion of Divines, that before the Fall (which yet is a less noble condition than is reserved for us in Heaven,) *Adam's* knowledge was such, that he was able at first sight of them to give each of the Beasts a name expressive of its Nature; because that in spite of some skill (which my Curiosity for Divinity, not Philosophy, gave me) in the holy Tongue, I could never find, that the Hebrew names of Animals, mention'd in the beginning of *Genesis*, argued a (much) clearer insight into their Natures, than did the names of the same or some other Animals in Greek, or other Languages; wherefore, (as I said) I will not urge *Adam's* knowledge in Paradise for that of the Saints in Heaven, though the notice he took of *Eve* at his first seeing of her, (if it were not convey'd to him by secret Revelation) may be far more probably urg'd, than his naming of the Beasts:

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Acts vij.
36.

2 Kings
vj. 17.

1 Cor.
xij. 12.

1 Joh. iij.
2.

But I will rather mind you, that the Proto-martyr's sight was strengthened so, as to *see the heavens open'd, and Jesus standing at the right hand of God*; and when the Prophet had pray'd, that his Servant's Eyes might be open'd, he immediately saw the Mountain, where they were, all cover'd with Chariots and Horsemen, which, though mention'd to be of Fire, were altogether invisible to him before. To which, as a higher Argument, I shall onely add a couple of passages of Scripture, which seem to allow us even vast Expectations as to the knowledge our glorifi'd Nature may be advanc'd to. The one is that which St. Paul says to the *Corinthians*, *For now we see through a glass darkly, but then face to face: Now I know in part, but then shall I know even as also I am known*. And the other, where Christ's Favourite-Disciple tells Believers, *Beloved, now we are the Sons of God, and it doth not yet appear what we shall be; but we know, that when he shall appear, we shall be like him: for we shall see him as he is*.

What has hitherto been discours'd, contains the first Consideration, that
I told

I told you might be propos'd about the Certainty ascrib'd to the knowledge we are said to have of Natural things; but this is not all I have to represent to you on this Subject. For I consider further, that 'tis not onely by the Certainty we have of them, that the knowledge of things is endear'd to us, but also by the Worthiness of the Object, the Number of those that are unacquainted with it, the Remoteness of it from common Apprehensions, the Difficulty of acquiring it without peculiar Advantages, the Usefulness of it when attain'd, and other particulars, which 'tis not here necessary to enumerate: I presume, you doubt not but your Friend does very much prefer the knowledge he has of the Mysteries of Nature (at many of which we have as yet but Ingenious Conjectures) to the knowledge of one that understands the Elements of Arithmetick, though He be Demonstratively sure of the Truth of most of his Rules and Operations. And questionless *Copernicus* received a much higher satisfaction in his Notion about the Stability of the Sun, and the Motion of the Earth,

though it were not so clear but that *Tycho*, *Ricciolus*, and other eminent Astronomers have rejected it, than in the knowledge of divers of the Theorems about the Sphere, that have been demonstrated by *Euclid*, *Theodosius*, and other Geometricians. Our discovering that some Comets are not, as the Schools would have them, Sublunary Meteors, but Celestial Bodies, and the Conjectural Theory, which is all that hitherto we have been able to attain of them, do much better please both your Friend, and you, and me, than the more certain knowledge we have of the time of the Rising and Setting of the Fixed Stars. And the Estimates we can make, by the help of Parallaxes, of the Heights of those Comets, and of some of the Planets, though they are uncertain enough, (as may appear by the vastly different distances that are assigned to those Bodies by eminent Astronomers;) yet these uncertain measures of such Elevated and Celestial Lights do far more please us, than that we can by the help of a Geometrical Quadrant, or some such Instrument, take with far greater Certainty the height of a Tower or a Steep'e.

a Steeple. And so a Mathematician, when he probably conjectures at the compass of the Terrestrial Globe, and divides, though but unaccurately, its Surface, first, into proportions of Sea and Land, and then into Regions of such Extents and Bounds, and, in a word, skillfully plays the Cosmographer; thinks himself much more nobly and pleasantly employ'd, than when, being reduc'd to play the Surveyor, he does with far more certainty measure how many Acres a Field contains, and set out with what Hedges and Ditches it is bounded. Now, that the knowledge of God, and of those Mysteries of Theology, that are ignor'd by far the greatest part of Mankind, has more sublime and excellent Objects, and is unattain'd to by much the greatest part even of Learned men, and nevertheless is of unvaluable Importance, and of no less Advantage towards the purifying and improving of us here, and the making us perfect and happy hereafter, the past Discourse has very much miscarried if it have not evinc'd. Wherefore, as to be admitted into the Privy-Council of some Great Monarch,

and thereby be enabled to give a probable guess at those thoughts and designs of his, that Govern Kingdoms, and make the Fates of Nations, is judged preferable to that clearer knowledge that a Notary can have of the dying thoughts and intentions of an ordinary Person whose Will he makes: And *as* the knowledge of a skilful Physician, whose Art is yet conjectural, is preferable to that of a Cutler that makes his Dissecting Knives, though this man can more certainly perform what he designs in his own profession, than the Physician can in his: And (in fine) *as* the skill of a Jeweller, that is conversant about Diamonds, Rubies, Saphires, and some other sorts of small Stones, which being for the most part brought us out of the *Indies*, we must take many things about them upon report, is, because of the Nobleness of the Object, prefer'd to that of a Mason that deals in whole Quarries of common Stones, and may be sure upon his own Experience of divers things concerning them, which as to Jewels we are allowed to know but upon Tradition: So a more dimm and imperfect knowledge of

of God, and the Mysteries of Religion, may be more desirable, and upon that account more delightful, than a clearer knowledge of those Inferior Truths that Physicks are wont to teach.

I must now mention one particular more, which may well be added to those that peculiarly indear Physicks to the Divine that is studious of them. For, as he contemplates the works of Nature not barely for themselves, but to be the better qualified and excited to admire and praise the Author of Nature; so his Contemplations are delightful to him, not barely as they afford a pleasing Exercise to his Reason, but as they procure him a more welcome approbation from his Conscience, these distinct satisfactions being not at all inconsistent. And questionless, though *Esau* did at length miss of his aim, yet, while he was hunting Venison for the good old Patriark that desired it of him, besides the pleasure he was us'd to take in pursuing the Deer he chas'd, he took a great one in considering, that now he hunted to please his Father, and in order to obtain of him an inestimable

Gen.
xxxvij,

Blessing. So, when *David* imployd his skillful Hand and Voice in praising God with Vocal and Instrumental Musick, he receiv'd in one Act a double satisfaction, by exercising his Skill and his Devotion; and was no less pleas'd with those melodious sounds, as they were Hymns, than as they were Songs. And this Example prompts me to add, that as the devout Student of Nature we were speaking of, does Intentionally refer the knowledge he seeks of the Creatures to the glory of the Creator; so in his Discoveries, that which most contents him, is, that the Wonders he observes in Nature, heighten that Admiration he would fain raise to a less disproportion to the Wisdom of God; and furnish him with a nobler Holocaust for those Sacrifices of Praise he is justly ambitious to offer up to the Deity. And as there is no doubt to be made, but that, when *David* invented (as the Scripture intimates that he did) new Instruments of Musick, there was nothing in that Invention that pleas'd him so much, as that they could assist him to praise God the more melodiously; so the pious Student of Nature finds nothing

Amos
v. 3.

nothing more welcome in the Discoveries he makes of her Wonders, than the Rises and Helps they may afford him, the more worthily to celebrate and glorifie the Divine Attributes ad-
 mbrated in the Creatures. And *as* a Huntsman or a Fowler, if he meets with some strange Bird or Beast, or other Natural Rarity, thinks himse'f much the more fortunate if it happen to be near the Court, where he may have the King to present it to, than if he were to keep it but for himself or some of his Companions; *So* our Devout Naturalist has his Discoveries of Natures Wonders indear'd to him, by having the Deity to present them to, in the Veneration they excite in the Finder, and which they inable him to ingage others to joyn in.

The

The fourth Section:

BUt I confess (Sir) I much fear, that That which makes your Friend have such detracting thoughts of Theology , is a certain secret Pride, grounded upon a Conceit, that the Attainments of Natural Philosophers are of so noble a kind, and argue so transcendant an Excellency of Parts in the Attainer, that he may justly undervalue all other Learning, without excepting Theology it self.

You will not, I suppose, expect, that a person, who has written so much in the praise of Physiques, and laboured so much for a little skill in it, should now here endeavour to depretiate that so useful part of Philosophy. But I do not conceive, that it will be at all injurious to it, to prefer the knowledge of Supernatural, to that of meer Natural things, and to think, that the Truths, which God indiscriminately exposes to the whole Race of Mankind, and to the bad as well as to the good, are inferiour to those Mysterious ones,

ones, whose Disclosure he reckons among his peculiar Favours, and whose Contemplation employs the Curiosity, and, in some points, exacts the wonder of the very Angels. That I may therefore repress a little the overweening Opinion your Friend has of his Physical Attainments, give me leave to represent a few particulars conducive to that purpose.

And first, as for the Nobleness of the Truths taught by Theology and Physicks, those of the former sort have manifestly the Advantage, being not onely conversant about far nobler Objects, but discovering things that Humane Reason of it self can by no means reach unto; as has been sufficiently declared in the foregoing part of this Letter.

Next, we may consider, that, whatever may be said to excuse *Pride* (if there were any) in *Moscus* the *Phœnician*, who is affirmed to have first Invented the Atomical Hypothesis, and in *Democritus* and *Leucippus*, (for *Epicurus* scarce deserves to be named with them,) that highly Advanc'd that Philosophy; and in Monsieur *Descartes*, who either Improv'd, or at least

least much Innovated the Corpuscularian Hypothesis : Whatever (I say) may be alledged on the behalf of these Mens pride ; I see no great Reason, why it should be allowed in such as your Friend ; who, though Ingenious Men, are neither Inventors, nor eminent Promoters of the Philosophy they would be admir'd for , but content themselves to Learn what others have Taught, or at least to make some little further Application of the Principles that others have Established, and the Discoveries they have made. And whereas your Friend is not a little proud of being able to confute several Errours of *Aristotle* and the Antients, it were not amiss if he consider'd, that many of the chief Truths that overthrow those Errours, were the Productions of Time and Chance, and not of his daring Ratiocinations : For, there needs no great Wit to disprove those that maintain the Uninhabiteness of the Torrid Zone, or deny the Antipodes, since Navigators have found many Parts of the former well Peopl'd, and Sailing round the Earth, have found men living in Countreys Diametrically opposite to Ours.

Ours. Nor will it warrant a man's Pride, that he believes not the Moon to be the onely Planet that shines with a borrowed Light, or the Galaxy to be a Meteor; since that now the Telescope shows us, that *Venus* has her Full and Wain like the Moon, and that the Milky way is made up of a vast multitude of little Stars, inconspicuous to the naked Eye. And indeed of those other Discoveries that overthrow the Astronomy of the Antients, and much of their Philosophy about the Celestial Bodies, few or none have any cause to boast, but the excellent *Galileus*, who pretends to have been the Inventor of the Telescope: For that Instrument once discover'd; to be able to reject the Septenary number of the Planets by the Detection of the four *Satellites* of *Jupiter*, or talk of the Mountains and Valleys in the Moon, requires not much more excellency in your Friend, than it would to descry in a Ship, where the naked Eye could discern but the Body of the Vessel, (to descry, I say) by the help of a Prospective Glass, the Masts, and Sails, and Deck, and perceive a Boat tow'd at her

her Stern: Though indeed *Galileo* himself had no great cause to boast of the Invention, though we are much oblig'd to him for the Improvement of the Telescope, since no less a Master of Dioptricks than *Des-Cartes*, does acknowledge with other Writers, that Perspective-Glasses were not first found out by Mathematicians or Philosophers, but casually by one *Metius*, a *Dutch* Spectacle-maker. On which occasion I shall mind you, that to hide Pride from Man, divers others of the chief Discoveries that have been made in Physicks, have been the Productions, not of Philosophy, but Chance, by which Gunpowder, Glass, and, for ought we know, the Verticity of the Load-stone, (to which we owe both the *Indies*) came to be found in these later Ages; as (more recently) the Milky Vessels of the Mesentery, the new Receptacle of the Chyle, and that other sort of Vessels which most men call the *Lymphæ-ducts*, were lighted on but by Chance, according to the Ingenious Confession of the Discoverers themselves.

We may farther consider, that those

those very things which are justly al-
 ledg'd in the praise of the Corpuscu-
 larian Philosophy it self, ought to les-
 sen the pride of those that but make
 use of it. For that Hypothesis, suppo-
 sing the whole Universe (the Soul of
 Man excepted) to be but a great *Auto-
 maton*, or self-moving Engine,
 wherein all things are perform'd by
 the bare motion (or rest) the size,
 the shape, and the scituation or tex-
 ture of the parts of the Universal
 Matter it consists of; all the *Pheno-
 mena* result from those few Principles,
 single or combin'd, (as the severat
 Tunes or Chimes that are rung on five
 Bells,) and these fertile Principles be-
 ing already establish'd by the Inven-
 tors and Promoters of the Particula-
 rian Hypothesis; all that such Persons
 as your Friend, are wont farther to do,
 is but to investigate or guess, by what
 kind of Motions the three or four
 other Principles are varied. So that
 the World being but, as it were, a
 great piece of Clock-work, the Na-
 turalist as such, is but a Mechanitian;
 however the parts of the Engine, he
 considers, be some of them much lar-
 ger, and others much minuter, than
 those

those of Clocks or Watches. And for an ordinary Naturalist to despise those that study the Mysteries of Religion, as much inferiour to Physical Truths, is no less unreasonable, than it were for a Watch-maker, because he understands his own Trade, to despise Privy-Counsellors, who are acquainted with the secrets of Monarchs, and Mysteries of State; or than it were for a Ship-carpenter, because he understands more of the Fabrick of the Vessel, to despise the Admiral, that is acquainted with the secret Designs of the Prince, and employ'd about his most important affairs.

That great Restorer of Physicks, the illustrious *Verulam*, who has trac'd out a most useful way to make Discoveries in the Intellectual Globe, as he calls it, confesses, that his work was (to speak in his own terms) *partus temporis potius quam ingenii*. And though I am not of his opinion, where he says in another place, that his way of Philosophizing does *exaequare ingenia*; yet I am apt to think, that the fertile Principles of the Mechanical Philosophy being once settled, the

Methods

Methods of inquiring and experimenting being found out, and the Physico-mechanical Instruments of working on Natures and Arts Productions being happily invented, the making of several lesser improvements, especially by rectifying of some almost obvious or supine Errours of the Schools, by the assistance of such facilitating helps, may fall to the lot of persons not endow'd with any extraordinary Sagacity, or acuteness of parts. And though the Investigation and clear establishment of the true Principles of Philosophy, and the devising the Instruments of Knowledge, be things that may be allowed to be the proper work of sublimer Wits; yet, if a man be furnish'd with such assistances, 'tis not every Discourse that he makes, or thing which he does by the help of them, that is difficult enough to raise him to that illustrious rank. And indeed, divers of the vulgar Errours, as well as of Scholars as other men, being mainly grounded upon the meer, and often mistaken, Authority of *Aristotle*, and perhaps some frivolous Reasons of his Scholastic Interpreters of such precarious

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and ungrounded things, that to ruine them, does oftentimes require more of boldness than skill ; it may perhaps be said of your Friend, in relation to his Philosophical Successes against such vulgar Errours, as I am speaking of, what a *Roman* said of *Alexander's* Triumph over the effeminate *Asiatics*, *Quod nihil aliud quàm bene ausus sit Vana contemnere.* And in some cases it happens, that, when once a grand Truth, or a happy way of Experimenting has been found, divers *Phænomena* of Nature, that had been left unexplain'd, or were left mis-explain'd by the Schools, did, in my opinion, require a far less straining Exercise of the mind to unriddle and explain them, *than* must have been requisite to dispel the darkness that attended divers Theological Truths that are now clear'd up, and perhaps *than* I have my self now and then employ'd in some of those Attempts, to illustrate Theological Matters, that you may have met in some Papers that I have presum'd to write on such Subjects. And indeed the Improvements, that such *Virtuosi* as your Friend are wont to make of the fertile Theorems
and

and Hints, that have been presented them by the Founders or prime Benefactors of true Natural Philosophy, are so poor and slender, and do so much oftner proceed from Industry and Chance, than they argue a transcendent sagacity, or a sublimity of Reason, that, though such persons may have cause enough to be Delighted with what they have done, yet they have none to be Proud of it; and their Performances may deserve our Thanks, and perhaps some of our Praise, but reach not so high as to merit our Admiration; which is to be reserv'd for Those, that have been either Framers, or Grand Promoters, of True and Comprehensive Hypotheses, or (else) the Authors of other noble and useful Discoveries, many ways applicable.

It will not perhaps be improper to add on this occasion, that, *as* our knowledge is not very *deep*, not reaching with any certainty to the bottom of Things, nor penetrating to their intimate or innermost Natures; *so* its Extent is not very *large*, not being able to give us, with any Clearness and particularity, an account of the Celestial

and deeply Subterranean parts of the World, of which all the others make but a very *(small* (not to say *contemptible*) portion.

For, as to the very Globe that we inhabit, not to mention, how many Plants, Animals, and Minerals, we are as yet wholly ignorant of, and how many others we are but slenderly acquainted with; I consider, that the objects about which our Experiments and Inquiries are conversant, do all belong to the *Superficial parts* of the Terrestrial Globe, of which the Earth, known to us, seems to be but as it were the Crust or Scarf. But what the Internal part of this Globe is made up of, is no less disputable than of what Substance the remotest Stars we can descry, consist: For even among the modern Philosophers some think, the internal Portion of the Earth to be pure and Elementary Earth, which (*say they*) must be found there, or nowhere. Others imagine it to be Fiery, and the Receptacle either of Natural or Hellish Flames. Others will have the Body of the Terrestrial Globe to be a great and solid Magnet. And the *Cartesians* on the other side, (*though they*

they all admit store of Subterranean Loadstones) teach, that the same Globe was once a Fix'd Star, and that, though it have since degenerated into a Planet, yet the Internal part of it is still of the same Nature that it was before; the change it has received proceeding onely from having had its outward parts quite cover'd over with thick spots (like those to be often observ'd about the Sun,) by whose Condensation the firm Earth we inhabit was form'd. And the mischief is, that each of these jarring Opinions is almost as difficult to be demonstratively prov'd False as True. For, whereas to the Centre of the Earth there is, according to the modestest account of our late Cosmographers, above three thousand and five hundred miles; my Inquiries among Navigators and Miners have not yet satisfi'd me, that mens Curiosity has actually reached above one mile or two at most downwards, (and that not in above three or four places,) either into the Earth or into the Sea. So that as yet our Experience has scarce grated any thing deep upon the Husk, (if I may so speak) without at all reaching the

Kernel of the Terraqueous Globe.

And alas! what is this Globe of ours, of which it self we know so little, in comparison of those vast and Luminous Globes that we call the Fix'd Stars, of which we know much less? For, though former Astronomers have been pleased to give us, with a seeming accurateness, their Distances and Bignesses, as if they had had certain ways of measuring them; yet Later and Better Mathematicians will (I know) allow me to doubt of what Those have deliver'd: For since 'tis confess'd, that we can observe no Parallax in the Fix'd Stars (nor perhaps in the highest Planets,) men must be yet to seek for a Method to measure the distance of those Bodies. And not onely the *Copernicans* make it to be I know not how many hundred thousands of miles greater than the *Ptolemeans*, and very much greater than even *Tycho*; but *Ricciolus* himself, though a great *Anti-Copernican*, makes the distance of the Fix'd Stars vastly greater, than not onely *Tycho*, but (if I mis-rémember not) than some of the *Copernicans* themselves. Nor do I wonder at these so great Discrepances,

pances, (though some amount perhaps to some millions of miles,) when I consider, that Astronomers do not measure the distance of the Fix'd Stars by their Instruments, but accommodate it to their particular Hypotheses. And by this uncertainty of the remoteness of the Fix'd Stars you will easily gather, that we are not very sure of their Bulk, no not so much as in reference to one another; since it remains doubtful, whether the differing Sizes, they appear to us to be of, proceed from a real Inequality of Bulk, or onely from an Inequality of Distance, or partly from one of those causes, and partly from the other.

But 'tis not my design to take notice of those Things, which the famous Disputes among the Modern Astronomers manifest to be dubious. For I consider, that there are divers things relating to the Stars, which are so remote from our knowledge, that the Causes of them are not so much as disputed of, or inquired into, such as may be among others, Why the number of the Stars is neither greater nor lesser than it is? Why so many of those Celestial Lights are so plac'd, as

not to be visible to our naked eyes, nor even when they are help'd by ordinary Telescopes? (which extraordinary good ones have assured me of.) Why among the familiarly visible Stars, there are so many in some parts of the Sky, and so few in others? Why their Sizes are so differing, and yet not more differing? Why they are not more orderly plac'd, so as to make up Constellations of regular or handsome Figures (of which the Triangle is, perhaps, the single Example) but seem to be scatter'd in the Skie as it were by Chance, and have as confus'd Configurations, as the Drops that fall upon ones Hat in a shower of Rain? To which divers other Questions might be added, as about the Stars, so about the Interstellar part of Heaven, which several of the Modern *Epicureans* would have to be empty, save where the beams of Light (and perhaps some other Celestial Effluvia) pass through it; and the *Cartesians* on the contrary think to be full of an *Æthereal* matter, which some, that are otherwise favourers of their Philosophy, confess they are reduc'd to take up but as an Hypothesis.

So that our knowledge is much short of what many think, not onely if it be consider'd Intensively, but Extensively, (as a Schoolman would exprefs it.) For there being so great a disproportion between the Heavens and the Earth, that some Moderns think the Earth to be little better than a Point in comparison even of the Orb of the Sun; and the *Cartesians*, with other *Copernicans*, think the great Orb itself, (which is equal to what the *Ptolemeans* call'd the Sun's Orb) to be but a Point in respect of the Firmament; and all our Astronomers agree, that at least the Earth is but a Physical Point in comparison of the Starry Heaven: Of how little extent must our knowledge be, which leaves us ignorant of so many things, touching the vast Bodies that are above us, and penetrates so little a way even into the Earth that is beneath us, that it seems confin'd to but a small share of the superficial part of a Physical Point? Of which consideration the natural result will be, that, though what we call our Knowledge, may be allowed to pass for a high Gratification to our minds, it ought not to puff them up; and

and what we know of the System, and the Nature of things Corporeal, is not so perfect and satisfactory, as to justify our despising the Discoveries of Spiritual things.

One of the former parts of this Letter may furnish me with one thing more, to evince the Excellencies and Prerogatives of the knowledge of the Mysteries of Religion; and that One thing is such, that I hope I shall need to add nothing More, because it is not possible to add any thing Higher; and that is, That the Preeminence above other Knowledge, adjudg'd to that of Divine Truths by a Judge above all Exception, and above all Comparison, namely, by *God* himself.

This having been but lately shown, I shall not now repeat it, but rather apply what hath been there evinc'd, by representing, that if He, who determines in favour of Divine Truths, were such an one, as was less acquainted, than our over-weening Naturalists with the secrets of their Idoliz'd Physicks; or if he were, though an Intelligent, yet (like an Angel) a Bare Contemplator of what we call the Works

Works of Nature, without having any Interest in their Productions, your Friends not acquiescing in his estimate of things might have, though not a fair Excuse, yet a stronger Temptation.

But when he, by whose direction we prefer the higher Truths revealed in the Scripture, before those which Reason alone teaches us concerning those comparatively mean Subjects, things Corporeal, is the same God that not onely understands the whole Universe, and all its parts, far more perfectly, than a Watch-maker can understand one of his own Watches, (in which he can give an account onely of the Contrivance, and not of the Cause of the Spring, nor the Nature of the Gold, Steel, and other Bodies his Watch consists of,) but did make both this great *Automaton*, the World, and Man in it: We have no colour to imagine, that he should either be ignorant of, or injuriously disparage, his own Workmanship, or impose upon his Favourite-Creature, Man, in directing him what sort of Knowledge he ought most to covet and prize. So that since 'tis He who fram'd the
World,

World, and all those things in it we most admire, that would have us prefer the knowledge he has vouchsafed us in his Word, before that which he has allow'd us of his Works, sure 'tis very unreasonable and unkind to make the Excellencies of the Workmanship a disparagement to the Author, and the Effects of his Wisdom a Motive against acquiescing in the Decisions of his Judgment; as if, because he is to be admir'd for his Visible Productions, he were not to be believ'd, when he tells us, that there are Discoveries that contain Truths more valuable than those which relate but to the Objects, that' he has expos'd to all men's Eyes.

The fifth Section.

I Doubt, I should be guilty of a most important Omission, if I should here forget to consider One thing, which I fear has a main stroak in the Partiality your Friend expresseth in his preference of Physicks to Theology; and that is, That he supposes he

he shall by the Former acquire a Fame, both more Certain and more Durable, than can be hop'd for from the Latter.

And I acknowledge, not onely with readiness, but with somewhat of Gratulation of the felicity of this Age, That there is scarce any sort of Knowledge more in request, than that, which Natural Philosophy pretends to teach; and that among the awaken'd and inquisitive part of Mankind, as much Reputation and Esteem may be gain'd by an insight into the Secrets of Nature, as by being intrusted with those of Princes, or dignifi'd with the splendid'st marks of their favour.

But though I readily confess thus much, and though perhaps I may be thought to have had, I know not by what fate, as great a share of that perfum'd Smoak, *Applause*, as (at least) *some* of those, which among the Writers that are now alive, your Friend seems most to Envy for it; yet I shall not scruple to tell you, partly from observation of what has happen'd to others, and partly too upon some little Experience of my own, that *neither* is it so easie as your Friend seems to believe

believe it, to get by the study of Nature a sure and lasting Reputation, *neither* ought the Expectation of it, in reason, make men undervalue the study of Divinity. Nor would it here avail to object (by way of prevention) that the Difficulties and Impediments of acquiring and securing Reputation, lie as well in the way of Divines as Philosophers, since this Objection has been already consider'd at the beginning of this Second Part of our present Tract. Besides, that the progress of our Discourse will shew, that the Naturalist, aspiring to fame, is liable to some Inconveniences, which are either not at all, or not near equally incident to the Divine. Wherefore without staying to take any further notice of this preventive Allegation, I shall proceed to make good the first part of the Assertion that preceded it, which that I may the more fully do, give me leave (after having premised, *That a man must either be a Writer, or forbear to Print what he knows ;*) to propose to you the following Considerations.

And first, if your *Physiophilus* should think to secure a great Reputation, by forbearing to couch any of his
Thoughts

Thoughts or Experiments in Writing, he may thereby find himself not a little mistaken. For if once he have gain'd a repute (upon what account soever) of knowing some things that may be useful to others, or of which studious men are wont to be very desirous, he will not avoid the Visits and Questions of the Curious. Or, if he should affect a Solitude, and be content to hide himself, that he may hide the things he knows; yet he will not escape the solicitations that will be made him by Letters. And if these ways of tempting him to disclose himself, prevail not at all with him to do so, he will *provoke* the Persons that have employ'd them; who finding themselves disoblig'd by being defeated of their Desires, if not also their Expectations, will for the most part endeavour to revenge themselves on him, by giving him the Character of an uncourteous and ill-natur'd person; and will endeavour, perhaps successfully enough, to decry his parts, by suggesting, That his affected Concealments proceed but from a Conscientiousness, that the things he is presum'd to possess, are but such, as,
if

if they should begin to be known, would cease to be valu'd.

You will say (perchance,) that so much reservedness is a fault: Nor shall I dispute it with you, whether it be or not; but, if he be open and communicative in Discourse to those Strangers that come to pump him, such is the disingenious temper of too too many, that he will be in great danger of having his Notions or Experiments arrogated by those to whom he imparts them, or at least by others, to whom those may (though perchance designlessly) happen to discourse of them. And then, if either *Physepbylus*, or any of his Friends that know him to be Author of what is thus usurp'd, should mention him as such, the Usurpers and their Friends would presently become his Enemies; and, to secure their own Reputation, will be solicitous to lessen and blemish his. And if you should now tell me, that your Friend might here take a Middle way, as that which in most cases is thought to be the best, by discoursing at such a rate of his Discoveries, as may somewhat gratifie those that have a Curiosity to learn them,

them, and yet not speak so clearly as
 divest himself of his Propriety in
 them; I should reply, That neither is
 this Expedient a sure one, nor free
 from Inconveniences. For most men
 are so self-opinionated, that they will
 easily believe themselves Masters of
 things, if they do but half understand
 them. And however, though the Per-
 sons to whom the Discourse was im-
 mediately made, should not have too
 great an Opinion of themselves, no
 more than too great a Sagacity; yet
 they may easily, by repeating what
 they heard and observ'd, give some
 more piercing Wit a hint sufficient to
 enable him to make out the whole
 Notion, or the Discovery, which he
 will then without scruple, and without
 almost any possibility of being dis-
 prov'd, assume for his own. But if it
 happen, (as it often will in Extempo-
 raneous Discourse) that a Philosopher
 be not rightly understood; either be-
 cause he has not the leisure, no more
 than a design, to explain himself fully,
 or because the Persons he converses
 with bring not a competent Capacity
 and Attention, he then runs a great-
 er danger than before. For the vanity

most men take in being known to have convers'd with eminent Philosophers, makes them very forward to repeat what they heard such a famous Wit say; and oftentimes being secure of not being contradicted, ignorantly to misrecite it, or wittingly to wrest it in favour of the Opinion they would countenance by it. So that, whereas by the formerly mention'd franckness of Discourse he is onely in danger to have the Truths he discover'd arrogated by Others, this reservedness exposes him to have Opinions and Errours that he never dream'd of, father'd on Him. And when a man's Opinions or Discoveries come once to be publickly discours'd of, without being propos'd by himself, or some Friend well instructed by him, he knows not, what Errours or Extravagancies may be imputed to him (and that without a Moral possibility left to most men to discern them, (by the mistake of the Weak, or the disingenuity of the Partial, or the Artifices of the Malitious. And even the greatness of a mans Reputation does sometimes give such countenance to vain Reports and Surmises, as by degrees to shake,

if not ruine, it. As we see, that Fryer
Bacon, and Trithemius, and Paracelsus,
who for their times were knowing as
well as famous men, had such feats
ascrib'd to them, as by appearing Fa-
bulous to most of the Judicious, have
tempted many to think, that all the
great things that were said of them
were so too.

These are some of the Inconve-
niences that a Naturalist may be liable
to, if he forbear the communicating
of his Thoughts and Discoveries him-
self: But if *Physophilus* should, to
shun these, aspire to Fame by the usual
way of writing Books, he may indeed
avoid these, but perhaps not without
running into other inconveniences and
hazards, very little inferiour to them.

First then, we may consider, that
whether a man writes in a Systematical
way, as they have done who have
publish'd entire Bodies of Natural
Philosophy, or Methodical Treatises
of some considerable part of it, or
whether he write in a more loose and
unconfined way, of any particular
Subject that belongs to Physicks;
whichsoever, I say, of these two ways
of writing Books he shall make choice

of, he will find it liable to Inconvenience enough.

For if he write Systematically, *first*, he will be obliged (that he may leave nothing necessary undeliver'd) to say divers things that have been said (perhaps many times) by others already, which cannot but be unpleasant, not onely to the Reader, but (if he be Ingenious) to the Writer. *Next*, there are so many things in Nature, whereof we know little or Nothing, and so many more of which we do not know Enough, that our Systematical Writer, though we should grant him to be very Learned, must needs, either leave divers things that belong to his Theme untreated of, or discourse of them slightly, and oftentimes (in likelihood) Erroneously. So that in this kind of Books there is always much said that the Reader *did* know, and commonly not a little that the Writer *does not* know. And to this I must add in the *third* place, that Natural Philosophy, being so vast and pregnant a Subject, that (especially in so Inquisitive an Age as this) almost every day discovers some new thing or other about it, 'tis scarce possible
for

for a Method, that is adapted but to what is Already known, to continue Long the most proper ; as the same Clothes will not long fit a Child, whose Age will make him quickly out-grow them. And therefore succeeding Writers will have a fair preference to compile new Systems, that may be more adequate to Philosophy improv'd since the publication of the former. And though there were little of New to be added, and it were more easie to Alter than to Mend the Method of our supposed Authour ; yet Novelty it self is a thing so pleasing and inviting to the generality of men, that It often recommends things that have nothing else to recommend them ; and we may apply to a great many other things, what I remember a famous Courtier of my acquaintance used to say of Mistresses, That *Another* was preferable to a *Better*, (the Better being but the same.)

But now if, declining the Systematical way, one shall choose the other of writing loose Tracts and Discourses, he may indeed avoid some of the lately mention'd Inconveniences, but will scarce avoid the being

plunder'd by Systematical Writers: For these will be apt to cull out those things that they like best, and insert them in their Methodical Books, (perhaps much curtal'd, or otherwise injur'd in the repeating,) and will place them, not as their own Author did, where they may best confirm or adorn his Discourse, and be illustrated or upheld by it; but where it may best serve the turn of the Compiler: And these Methodical Books promise so much more Compendious a way than others to the Attainment of the Sciences they treat of, that though really for the most part they prove greater helps to the Memory, than the Understanding; yet most Readers, being, for want of Judgment or of Patience, of another mind, they are willing to take it for granted, that in former Writers, if there have been any thing considerable, it has been all carefully extracted, as well as orderly digested by the later Compilers: And though I take this to be a very Erroneous and Prejudicial Conceit, yet it obtains so much, that as Goldsmiths that onely give shape and lustre to Gold are far more esteem'd,
and

and in a better Condition, than Miners, who find the Ore in the bowels of the Earth, and with great pains and industry dig it up, and refine it into Metall; so those that with great study and toil successfully penetrate into the hidden Recesses of Nature, and discover latent Truths, are usually less regarded or taken notice of by the Generality of Men, than those who by plausible Methods and a neat Style reduce the Truths, that others have found out, into Systems of a Taking Order and a Convenient Bulk.

I consider in the *second* place, That as the Method of the Books one writes, so the Bulk of them may prove prejudicial to the Naturalist that aspires to Fame: For if he write large Books, 'tis odds but that he will write in them many things unaccurate, if not impertinent, or that he will be oblig'd to repeat many things that others have said before; and if he write but small Tracts, as is the custome of the Judiciousest Authors, who have no mind to publish but what is New and Considerable, as their Excellency will make them to be

the sooner dispers'd, so the smallness of the Bulk will endanger them to be quickly lost; as Experience shows us of divers Excellent little Tracts, which, though publish'd not many years ago, are already out of Print, (as they speak) and not to be met with, save by chance, in Stationers Shops. So that these Writings (which deserve a better fate) come, after a while, either to be lost, (which is the case of divers,) or to have their Memory preserv'd onely in the larger Volume of some Compiler, whose Industry is onely preferable to his Judgment; it being observable, that (by I know not what unlucky fate) very few (for I do not say, *None*) that addict themselves to make Collections out of others, have the Judgment to cull out the choicest things in them; and the small Tracts, we are speaking of, being preserv'd but in such a Quoter or Abridger, will run a very great danger of being convey'd to posterity but under such a Representation as it pleases the Compiler.

And This (that I may proceed to my *third* Consideration) may make the Naturalists Fame very uncertain,
not

not onely because of the want of Judgment, that (as I newly said) is too often observable in Compilers, whereby they frequently leave far better things than they take, but for the want of skill to understand the Author they Cite and Epitomize, or Candor to do him right. For sometimes mens Physicall Opinions, and several Passages of their Writings, are so misrepresented by Mistake or Design, especially if those that recite their Opinions be not Of them, that men are made to teach or deliver things quite differing from their Sense, and perhaps quite contrary to it ; of which, I my self have had some unwelcome Experience, a Learned Writer pretending, I know not how often, that I asserted an Opinion, about which I did expressly *ἑρῆκεν*. And another noted Writer having (not out of design, but unacquaintedness with Mechanics, and the Subject I write of,) given me commendations for having, by a new Experiment, prov'd a thing, the quite contrary whereof I intended thereby to evince, and am not Alone mistaken, if I did not do it. Other Naturalists I have met with, whose

whose Writings Compilers have traduc'd out of hatred to their Persons, or their Religion; as if Truth could in nothing be a Friend to one that is the Traducers's Enemy; or as if a man that falls into an Errour in Religion, could not light upon a good Notion in Philosophy, in spite of all the Truths we owe to *Aristotle*, *Epicurus*, and the other Heathen Philosophers. Nay, some there are, that will set themselves to decry a man's Writings, not because they are directly His Enemies, but because He is esteem'd by Theirs; as you may remember an Instance in a Servant of yours, who had divers things written against Him upon this very Account. Nor is it onely by the Citations of profess'd Adversaries or Opponents, that a worthy Writer's Reputation may be prejudic'd, since 'tis not unfrequently so by those, that mention him with an *Encomium*, and seem dispos'd to honour him. For I have observ'd it to be the Trick of certain Writers, to name an Author with much Complement, onely for some one or few of the least considerable things they borrow of Him; by which artifice they endeavour

vour to conceal their being Plagiaries of more and better; which yet is more excusable than the Practise of some, who proceed to that pitch of dissingenuity, that they will rail at an Author, to whom indeed they owe too much, that they may not be thought to beholden to him.

But (4.) I must add, that besides these dangers that a Naturalists Reputation with posterity may run through the Ignorance or Perverseness of men, it is liable to divers other hazards, from the very Nature both of Men, of Opinions, and of Things.

For, as men's Genius's and Inclinations are naturally various in reference to Studies, one man passionately affecting one sort of them, and another being fond of quite differing ones; so those Inclinations are oftentimes variously and generally determin'd by external and accidental Causes. As when some great Monarch happens to be a great Patron, or a Despiser, and perhaps Adversary, of this or that kind of Learning: And when some one man has gain'd much applause for this or that kind of Study; Imitation, or Emulation oftentimes makes many others

others addict themselves to it. Though *Rome* under the Consuls was inconsiderable for Learning, yet the Reputation of *Cicero*, and Favour of *Augustus*, brought Learning into request there; where the small countenance it met with among most of the succeeding Emperours, kept it far inferior to what it had been among the *Greeks* about *Alexander's* Age. And the Age of the same *Augustus* was enobled with store of Poets, not onely by the countenance which He and *Mæcenæ*s afforded them, but probably also by the Examples they gave to, and the Emulation they excited in, one another. And after the decay of the *Roman* Empire, in the Fourth Century, Natural Philosophy and the Mathematicks being very little valued, and less understood, by reason that mens Studies were, by the Genius of those Ages apply'd to other Subjects, every hundred years scarce produc'd One Improver, (not to say one Eminent Cultivator) either of Mathematicks or of Physicks: By which you may see, how little Certainty there is, that, because a man is skill'd in Natural Philosophy, and that Science is

now

now in Request, his Reputation shall be as great as now, when perhaps the Science it self will be grown out of Repute.

But besides the Contingencies that may happen to a Naturalist's Fame upon this Account, That the Science He cultivates, is, as well as others, subject to Wanes and Eclipses in the general esteem of men; there is another uncertainty arising from the Vicissitudes that are to be met with in the Estimates men make of differing Hypotheses, Sects, and ways of Philosophizing about the same Science, and particularly about Natural Philosophy. For during those Learned Times, when Physicks first and most flourish'd among the *Grecians*, *Democritus*, *Leucippus*, *Epicurus*, *Anaxagoras*, *Plato*, and almost all the Naturalists that preceded *Aristotle*, were Corpuscularians, endeavouring, though not all by the same way, to give an account of the *Phænomena* of Nature, and even of Qualities themselves, by the Bigness, Shape, Motion, &c. of Corpuscles, or the minutest active parts of Matter: Whereas *Aristotle*, having attempted to deduce the *Phæ-*

nomena

nomena from the four first Qualities, the four Elements, and some few other barren Hypotheses, ascribing what could not be explicated by them, (and consequently for the greatest part of Natures *Phænomena*) to Substantial Forms and Occult Qualities; (Principles that are readily nam'd; but scarce so much as pretended to be understood,) and having upon these slight and narrow Principles reduc'd Physicks into a kind of System, which the judicious Modesty of the Corpuscularians had made them backward to do; the Reputation that his great Pupil *Alexander*, as well as his Learning gave him; the Easiness of the way he propos'd to the attainment of Natural Philosophy; the good luck his Writings had to survive those of *Democritus*, and almost all the rest of the Corpuscularians, when *Charles* the Great began to establish Learning in *Europe*: These, I say, and some other lucky Accidents that concurr'd, did for about seven or eight hundred years together, make the Corpuscularian Philosophy not onely be Justled, but even Exploded out of the Schools by the Peripatetic;

tick; which in our Times is, by very many, upon the Revival of the Corpuscularian Philosophy, rejected, and, by more than a few, derided as precarious, unintelligible, and useleſs. And to give an instance in a particular thing, (which, though formerly named, deserves to be again mention'd to our present purpose,) *Aristotle* himself somewhere confesses, (not to say brags) that the *Greek* Philosophers, his Predecessors did, unanimously teach, that the World was (I say not Created, but) Made, and yet He, almost by his single Authority, and the subtille Arguments (as some have been pleas'd to think them,) that he employ'd, (though divers of them were borrow'd of *Ocellus Lucanus*,) was able for many Ages to introduce into the Schools of Philosophers that Irreligious and Ill-grounded Opinion of the Eternity of the World, which afterwards the Christian Doctrine made men begin to question, and which now both that and Right Reason have perswaded most men to reject.

And this invites me to consider farther, That the present success of the Opinions that your *Physiophilus* befriends,

friends, ought not to make him so sure as he thinks he is, that the same Opinions will be always in the same, or greater Vogue, and have the same Advantages, in point of General Esteem that they now have, over their Corrivals. For, Opinions seem to have their Fatal Seasons and Vicissitudes, as well as other things; as may appear, not onely by the Examples of it newly given, but also by the Hypothesis of the Earths Motion, which having been in great request before *Pythagoras*, (who yet is commonly thought the Inventor of it,) had its Reputation much increas'd by the suffrage of the famous Sect of the *Pythagoreans*, (whom *Aristotle* himself takes notice of as the Patrons of that Opinion,) and yet afterwards for near 2000 years it was laugh'd at, as not onely false, but ridiculous. After all which time, this so long antiquated Opinion being reviv'd by *Copernicus*, has in a little time made so great a progress among the modern Astronomers and Philosophers, that if it go on to prevail at the same rate, the Motion of the Earth will be acknowledg'd by all its Mathematical Inhabitants. But though

it be often the Fate of an oppress'd Truth, to have at length a Resurrection, yet 'tis not always its peculiar privilege ; for, Obsolete Errours are sometimes reviv'd, as well as discredited Truths: So that the general disrepute of an Opinion in one Age will not give us an absolute security, that 'twill not be in as general Request in another, in which it may perhaps not onely Revive, but Reign.

Nor is it onely in the Credit of mens Opinions about Philosophical Matters, that we may observe an Inconstancy and Vicissitude, but in the very Way and Method of Philosophizing; for *Democritus*, *Plato*, *Pythagoras*, and others, who were of the more sincere and ingenious Cultivators of Physicks among the *Greeks*, exercis'd themselves chiefly either in making particular Experiments and Observations, as *Democritus* did in his manifold Dissections of Animals; or else apply'd the Mathematicks to the Explicating of a particular *Phænomenon* of Nature, as may appear (not to mention what *Hero* teaches in his *Pneumaticks*,) by the Accounts, *Democritus*, *Plato*, and others, give of

Fire and other Elements, from the Figure and Motion of the Corpuscles they consist of. And although this way of Philosophizing were so much in request before *Aristotle*, that (albeit he unluckily brought in another, yet) there are manifest and considerable footsteps of it to be met with in some of his Writings, (and particularly in his Books of Animals, and his Mechanical Questions;) yet the Scholastick followers of *Aristotle* did, for many Ages, neglect the way of Philosophizing of the Antients, and (to the great prejudice of Learning) introduc'd every where in stead of it a quite contrary way of Writing. For, not onely they laid aside the Mathematicks, (of which they were for the most part very ignorant,) but instead of giving us Intelligible and Explicite (if not Accurate) Accounts of particular Subjects, grounded upon a distinct and heedful Consideration of them, they contented themselves with hotly disputing, in general, certain unnecessary, or at least unimportant questions about the Objects of Physicks, about *Materia Prima*, Substantial Forms, Privation, Place, Generation, Corruption,

ruption, and other such general things, with which when they had quite tyr'd themselves and their Readers, they usually remain'd utter strangers to the particular Productions of that Nature, about which they had so much wrangled, and were not able to give a man so much true and useful Information about Particular Bodies, as even the meanest Mechanics, such as Miners, Butchers, Smiths, and even Dairy-maids, could do. Which made their Philosophy appear so Imperfect and Useless, not onely to the Generality of Men, but to the more Elevated and Philosophical Wits, that our great *Verulam* attempted with much Skill and Industry, (and not without some Indignation) to restore the more modest and useful way practis'd by the Antients, of Inquiring into particular Bodies, without hastening to make Systems, into the Request it formerly had; wherein the admirable Industry of two of our *London* Physicians, *Gilbert* and *Harvey*, has not a little assisted him. And I need not tell you, that since Him, *Descartes*, *Gassendus*, and others, having taken in the Application of Geome-

trical Theorems, for the Explication of Physical Problems; He, and They, and Other Restorers of Natural Philosophy, have brought the Experimental and Mathematical way of Inquiring into Nature into at least as high and growing an Esteem, as ever it possess'd when it was most in Vogue among the Naturalists that preceded *Aristotle*.

To the Considerations I have hitherto deduc'd, which (perhaps) might alone suffice for my purpose, I shall yet subjoyn one that I take to be of greater weight than any of them, for the manifesting how difficult it is to be sure, that the Physical Opinions, which at present procure a Champion or Promoter of them Veneration, shall be still in request. For besides that inconstant Fate of applauded Opinions, which may be imputed to the Inconstancy of Men, there is a greater danger that threatens the Aspirers Reputation from the very Nature of things: For the most general Principles of all, *viz.* the Figure, Bigness, Motion, and other Mechanical Affections of the small parts of Matter, being (as your Friend believes) sufficiently

ciently and clearly establish'd already; he must expect to raise his Reputation from subordinate Hypotheses and Theories; and in these I shall not scruple to say, that 'tis extremely difficult, even for those that are more exercis'd than He, in framing Them and in making of Experiments to have so reaching and attentive a prospect of all things fit to be known, as not to be liable to have their Doctrine made doubtful, or disprov'd by something that He *did not* discover, or that After-times may. This, I doubt not, but you would easily be prevail'd with to allow, if I had leisure and conveniency to transmit to you my Sceptical Naturalist. And without having recourse to that Tract, it may possibly suffice, that we consider, that one of the Conditions of a good * Hypothesis is, that It fairly comport not onely with all other Truths, but with all other *Phænomena* of Nature, as well as those 'tis fram'd to explicate. For this being granted, (which cannot be deny'd,) He that establishes a Theory, which he expects shall be acquiesc'd in by all succeeding Times, and make Him famous in them, must not onely

* See the
Requi-
sites of a
good Hy-
pothesis.

have a care, that none of the *Phenomena* of Nature, that are already taken notice of, do contradict his Hypothesis at the present, but that no *Phenomena* that may be hereafter discover'd, shall do it for the future. And I very much question, whether *Physiophilus* do know, or, upon no greater a number and variety of Experiments than most men build upon, *can know*, how incompleat the History of Nature we yet have, is, and how difficult it is to build an Accurate Hypothesis upon an Incompleat History of the *Phenomena* 'tis to be fitted to; especially considering that (as I was saying) many things may be discover'd in After-times by Industry or Chance, which are not now so much as dream'd of, and which may yet overthrow Doctrines speciously enough accommodated to the Observations that have been hitherto made.

Those Antient Philosophers, that thought the Torrid Zone to be uninhabitable, did not establish their Opinion upon wild Reasonings; and as it continu'd uncontrol'd for many Ages, so perhaps it would have always done, if the Discoveries made
by

by Modern Navigations had not manifested it to be Erroneous. The Solidity of the Celestial Orbs was, for divers Centuries above 1000 years, the general opinion of Astronomers and Philosophers, and yet in the last Age and in Ours, the free Trajection, that has been observ'd in the Motion of some Comets from one of the supposed Orbs to another, and the Intricate Motions in the Planet *Mars*, (observ'd by *Kepler* and others, to be sometimes nearer, as well as sometimes remoter from the Earth than is the Sun;) these, I say, and other *Phænomena* undiscover'd by the Antients, have made even *Tycho*, as well as most of the recent Astronomers, exchange the too long receiv'd Opinion of solid Orbs for the more warrantable belief of a Fluid *Æther*. And though the Celestial part of the World, by reason of its remoteness from us, be the most unlikely of any other to afford us the means of overthrowing old Theories by new Discoveries; yet even in that we may take notice of divers Instances to our present purpose, though I shall here name but this One, *viz.* That, after the *Ptolemaick* Number and Order

of the Planets had past uncontradicted for very many Ages; and even the *Tychonians* and *Copernicans*, (however they did by their differing Hypotheses dissent from the *Ptolemaick* System (as to the Order,) did (yet) acquiesce in it as to the number of the Planets ; by the happy Discoveries, made by *Galileo* of the *Satellites* of *Jupiter*, and by the excellent *Hugenus*, of the New Planet about *Saturn*, (which I think I had the luck to be the first that observ'd and shew'd Disbelievers of it in *England*,) the Astronomers of all persuasions are brought to add to the old *Septenary* number of the Planets, and take in Five others that their Predecessors did not dream of. That the Chyle prepar'd in the Stomach pass'd through the *Mesaraick* Veins to the *Liver*, and so to the Heart, was for many Ages the unanimous Opinion, not onely of Physicians, but Anatomists, whose numerous Dissections did not tempt them to question it ; and yet, since the casual, though lucky, Discoveries made of the Milky Vessels in the *Thorax* by the dextrous *Pecquet*, those that have had with you and I the cu-
riosity

riosity to make the requisite Experiments, are generally convinc'd, that (at least) a good part of the Chyle goes from the Stomach to the Heart, without passing through the Mesaraick Veins, or coming at all to the Liver.

'Twere easie to multiply Instances of this kind, but I rather choose to add, that 'tis not onely about the Qualities, and other Attributes of things, but about their Causes also, that New and oftentimes Accidental Discoveries may destroy the credit of Long and generally approv'd Opinions. That Quick-lime exceedingly heats the Water that is pour'd on to quench it, on the account of *Antiperistasis*, has been very long and universally receiv'd by the School-Philosophers, where 'tis the grand and usual Argument, urg'd to Establish *Antiperistasis*; and yet I presume you have taken notice, that this Proof is made wholly Ineffectual in the judgment of many of the *Virtuosi*, by some contrary Experiments of mine, and particularly that of exciting in Quick-lime full as great an Effervescence by the Affusion of Hot water instead of Cold. So it has been generally believ'd, that in the

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See this Subject handled at large in an Appendix to the Author's *Examen of Antiperistasis*,

* In the
History
of Cold.

* Now
publish'd
in the
Book of
New Phy-
sico-Me-
chanical
Experi-
ments.

Congelation of Water, that Liquor is condens'd into a narrower room, whereas our late Experiments * have satisfied most of the curious, that Ice is Water expanded, or (if you please) that Ice takes up more room than the Water did, whilst it remain'd unfrozen. And whereas the Notion of Nature's abhorrence of a *Vacuum*, has not only ever since *Aristotle's* time made a great noise in the Schools, but seems to be Confirmable by a multitude of *Phænomena*; the Experiments of *Toricellius*, and some of * Ours, evidencing, that the Air has a great Weight and a strong Spring, have, I think, perswaded almost all, that have impartially consider'd them, that, whether there be or be not such a thing as they call *Fuga Vacui*, yet Suction, and the Ascension of Water in Pumps, and those other *Phænomena* that are generally ascrib'd to It, may be very well Explicated without it, and are indeed caus'd by the Weight of the Atmosphere, and the Elastical power of the Air.

And this puts me in mind to take notice, that even practical Inventions, where one would think the Matter of
Fact

fact to be Evident, may by undream'd of Discoveries be brought to lose the general Reputation they had for compleatness in their kind. For to endear the Invention of Sucking Pumps and of Syphons, it has been generally presum'd, that by means of either of these, Water and any other Liquor may, *ob fugam vacui*, be rais'd to what height one pleases; and accordingly ways have been propos'd by famous Authors, to convey Water from one side of an high Mountain to the other: Whereas first the unexpected Disappointments that were met with by some Pump-makers, and afterwards Experiments purposely made, sufficiently evince, that neither a Pump nor a Syphon will raise Water to above 35 foot or thereabouts, nor Quicksilver to so many Inches.

And as to the Invention of Weather-glasses, which has been so much and justly applauded and us'd, as it has been generally receiv'd for the truest Standard of the Heat and Cold of the Weather; so it seems to be liable to no suspicion of deceiving Us: For not onely 'tis evident, that in Winter, when the Air is very Cold, the
Water

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of Cold.

Water rises much higher than in Summer and other Seasons, when 'tis not so; but if you but apply your warm hand to the Bubble at the top, the Water will be visibly depress'd by the rarifi'd Air, which upon the removal of the Hand returning to its former Coldness, the Water will forthwith as manifestly ascend again. And yet by finding, that, as the *Atmosphere* has a considerable weight, so this weight is not always the same, but varies much, and that, as far as I can yet discover, uncertainly enough; I have had the luck to satisfie many of the Curious, that these Open Thermometers are not to be safely rely'd on, since in them the Liquor is made to rise and fall, not onely, as men have hitherto suppos'd, by the Cold and Heat of the Ambient Air, but (as I have shewn by divers new Experiments) according to the varying Gravity of the *Atmosphere*; which Variation has not onely a Sensible, but a very Considerable Influence upon the Weather-glass. To these Instances I shall annex onely one more, from which we may learn, that notwithstanding a very heedful survey of all

all that at present a man can take notice of, or well suspect that he ought to take into his Consideration, the Case may be such, that having devis'd an Instrument, He may use it many years with good success; and yet, unless he were able to live very many more, he shall not be sure to out-live the danger of finding the same Instrument (though to sense as well condition'd as ever) fallacious: As he that first appli'd a Magnetick Needle to the finding of the Meridian Line, might very probably conclude, that his Needle pointing directly *N.* and *S.* or declining from it just two or three, or some other determinate number of Degrees, he had discover'd a certain and ready way, without the help of Sun or Stars, or Astronomical Instruments, to describe a Meridian Line, and if he liv'd but an ordinary number of years after his Observation, he might probably have found his Instrument not deceitful; which yet it may now be, the Magnetick Needle not only declining in many places from the true points of *N.* and *S.* but (as later Discoveries inform us) varying in tract of time its Declination in the self same place.

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The Considerations hitherto propos'd might easily enough be encreas'd by more of the same tendency, especially if I thought fit to borrow from a Discourse (of mine) purposely written *about the Partiality and Uncertainty* of Fame ; but in stead of adding to their Number, I should think myself oblig'd to excuse my having already mention'd so many, and insisted so much upon them, if I did not vehemently suspect, that in your *Physiophilus*, (as well as in many other modern Naturalists,) scarce any thing does more contribute to an Undervaluation of the study of Divinity, than that being eagerly ambitious of a Certain, as well as a Posthume Fame, he is confident that Physiologie will help to it; and therefore the design of his Discourse made me think it expedient to spend some time to manifest, *That 'tis far less easie than he thinks, to be as sure that he shall have the praises of Future Ages, as that (though he have them) he shall not hear them.*

The past Considerations have, I presume, convinc'd you, that 'tis no such easie matter for a Naturalist to acquire

acquire a great reputation and be sure it will prove a lasting one. Wherefore, that I may also confirm the second Part of what formerly I propos'd, I now proceed to show, that, though the case were otherwise, yet he would have no reason to slight the study of Divinity.

I. For, in the first place, nothing hinders, but that a man who values and inquires into the Mysteries of Religion, may attain to an Eminent degree in the knowledge of those of Nature. For frequently men of great parts may successfully apply themselves to more than one Study; and few of them have their thoughts and hours so much ingross'd by that one Subject or Imployment, but that, if they have great Inclinations as well as Fitness for the study of Nature, they will find time, not onely to Cultivate it, but to Excel in it. You need not be told, That *Copernicus*, to whom our late Philosophers owe so much, was a Churchman; That his Champion *Lansbergius* was a Minister, and that *Gassendus* himself was a Doctor of Divinity. Among the Jesuites you know, that *Clavius* and divers others have

have as prosperously addicted themselves to Mathematicks as Divinity. And as to Physicks, not onely *Scheiner*, *Aquilonius*, *Kircher*, *Schottus*, *Zucchi*, and others, have very laudably cultivated the Optical and some other Parts of Philosophy; but *Ricciolus* himself, the Learned Compiler of that Voluminous and Judicious Work of the *Almagestum novum*, wherein he has inserted divers accurate Observations of his own, is not onely a Divine, but a Professor of Divinity. And without going out of our own Countrey, I could, if I durst for fear of offending the modesty of those I should name, or injuring the merit of those I should omit; I could (I say) if it were not for this, among our English Ecclesiasticks name you divers, who though they apply themselves so much to the study of the Scripture, as to be not onely solid Divines, but Excellent Preachers, have yet been so happily conversant with Nature, that, if they had liv'd in the Learned times of the *Greeks*, they would have rivall'd, if not eclips'd, some of them, *Pythagoras* and *Euclid*; others of them, *Anaxagoras* and *Epicurus*; and some of

of them, even *Archimedes* and *Democritus* themselves.

And certainly, provided there be Curiosity and Industry enough imploy'd in the *Study* of Nature, it is not Necessary, that the *knowledge* of Nature should be the ultimate End of that Study; a Fondness of the Object being requir'd onely in order to the Engaging the mind to such a serious Application, as a higher aim May sufficiently invite us to; and Will rather promote than discourage. *David* became no less skilful in Musick, than Ames
vj. 5. those that were addicted to it onely to please themselves in it; though we may reasonably suppose, that so pious an Authour of Psalms and Instruments aspired to an Excellency in that delightful Science; that he might Apply and Prefer it to the Service of the Temple, and promote the Celebration of God's Praises with it. And as Experience has manifested, that the Heathen Philosophers, that courted Moral Vertue for her self, did not raise it to that pitch, to which 'twas advanc'd by the Heroick Practises of those true Christians, that in the highest Exercise of Vertue had a Religious

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ligious aim at the pleasing and enjoying of God; so I see not, why Natural Knowledge must be more prosperously cultivated by those selfish Naturalists, that aim but at the pleasing of themselves in the attainment of that Knowledge, than those Religious Naturalists, who are invited to Attention and Industry, not onely by the pleasantness of the Knowledge it self, but by a higher and more engaging Consideration; namely, that by the Discoveries they make in the Book of Nature, both themselves and others may be excited and qualifi'd the better to admire and praise the Authour, whose Goodness does so well match the Wisdom they celebrate, that he declares in his Word, *That those that honour him, he will honour.*

1 Sam.
ij. 30.

And as a man that is not *in love* with a fair Lady, but has onely a *respect* for her, may have as true and perfect, though not as discomposing an Idea of her face, as the most passionate *Inamorato*; so I see not, why a Religious and Inquisitive Contemplator of Nature may not be able to give a good account of her, without
pre-

preferring her so far to all other Objects of his study, as to make her his Mistress, and perhaps too his Idol.

II. And now I proceed to consider in the second place, That matters of Divinity may, as well as those of Philosophy, afford a Reputation to Him that discovers, or illustrates them. For though the Fundamental Articles of Christian Religion be, as I have formerly declar'd, little less Evident than Important; yet there are many other points in Divinity, and passages in the Scripture, which (for Reasons that I have elsewhere mention'd) are exceeding hard to be clear'd, and do not only pose ordinary Readers, and the common sort of Scholars, but will sufficiently exercise the Abilities of a Great Wit, and give him opportunity enough to manifest that He is One. For divers of the points I speak of are much benighted upon the score of the Sublimity of the Things they treat of, such as are the Nature, Attributes, and Decrees of God, which cannot be easie to the dimm understandings of Us that are but Men: And many other particulars that are not Abstruse in their own Nature, are yet made

Q 2

Obscure

Obscure to us by our Ignorance, (or at least Imperfect Knowledge,) of the diffus'd Languages wherein they are deliver'd, and the great remoteness of the Ages when, and the Countreys where, the things recorded were done or said. So that oftentimes a man may need and show as great Learning and Judgment to dispel the Darkeness, wherein Time has involv'd Things, as that which Nature has cast on them: And in effect we see, that *St. Augustine*, *St. Hierom*, *Origen*, and others of the Fathers, have acquir'd no less a Reputation, than *Empedocles*, *Anaxagoras*, or *Zeno*. And *Grotius*, *Salmasius*, *Mr. Mede*, *Dr. Hammond*, and some other Critical Expounders of difficult Texts of Scripture, have thereby got as much Credit, as *Fracastorius* by his Book *De Sympathia & Antipathia*; *Levinus Lemnius* by his *De Occultis rerum Miraculis*; or *Cardanus* (and his Adversary *Scaliger*) by what they writ *De Subtilitate*; or even *Fernelius* himself by his Book *De Abditis Rerum Causis*. And it will contribute to the Credit which Theological Discoveries and Illustrations may procure a Man, that the

the Importance of the Subjects, and the earnestness wherewith men are wont to busie themselves about them, some upon the score of Piety, and others upon that of Interest, some to Learn Truths, and others to Defend what they have long or publicly taught for Truth, does make greater numbers of Men take notice of such Matters, and concern themselves far more about them, than about almost any other things, and especially far more, than about matters purely Philosophical, which but few are wont to think themselves fit to judge of, and concern'd to trouble themselves about. And accordingly we see, that the Writings of *Socinus*, *Calvin*, *Bel-larmine*, *Padre Paulo*, *Arminius*, &c. are more famous, and more studied, than those of *Telesius*, *Campanella*, *Severinus Danus*, *Magnenus*, and divers other Innovators in Natural Philosophy. And *Erastus*, though a very Learned Physician, is much less famous for all his Elaborate Disputations against *Paracelsus*, than for the little Tract against particular Forms of Church-Government. And I presume You have taken notice, as well as I,

that there are scarce any Five new Controversies in all Physicks, that are known to, and hotly contended for by so many, as are the Five Articles of the *Remonstrants*.

III. My second Consideration being thus dispatch'd, it remains, that I tell you in the Third place, that Supposing, but not Granting, that to prosecute the Study of Divinity, one must of necessity neglect the Acquisit of Reputation; yet this Inconvenience it self ought not to deter us from the Duty it would dissuade. For in all Deliberations, wherein any thing is propos'd to be quitted or declin'd, to obey or please God; me thinks, we may fitly apply that of the Prophet to the Jewish King, who being perswaded (to express his Concern for God's Glory) to decline the Assistance of an Idolatrous Army of *Israelites*, and objecting, that by complying with the Advice given Him, he should lose a Sum of Money, amounting to no less than the Hire of a Potent Army; receiv'd from the Prophet this brisk, but rational, Answer, *The Lord is able to give thee far more than this.* The Apostle *Paul*, who had

2 Chron.
xxv. 9.

had been traduc'd, revil'd, buffeted, scourg'd, imprison'd, shipwrack'd, and ston'd for his Zeal to propagate the Truths, whose study I plead for; after He had once had a Glimpse of that great *Recompense of Reward* that is reserved for us in Heaven, scruples not to pronounce, that he *finds upon casting up the Account* (for He uses the Arithmetical term λογίζομαι) *that the sufferings of this present time are not worthy to be compared with the Glory that is to be reveal'd in us.* And if all that the Persecuted Christians of his time could suffer were not *suitable* (for so I remember the same Greek word to signify elsewhere) or proportionable to that Glory; it will sure far out-weigh what we can now forego or decline for it. The loss of 'an Advantage, and much more the bare missing of it, being usually but a Negative Affliction, in comparison of the Actual sufferance of Evil. Christ did not onely tell his Disciples, that He who should give the least of his Followers so much as a cup of cold water upon the score of their relation to Him, should not be unrewarded; but when the same persons asked Him,

Q 4

what

Rom.
viii. 18.Luke
xxii. 15.

what should be done to Them, who had left All to follow Him; He presently allots Them *Thrones*, as much outvaluing that *All* they had lost, as an ordinary Recompenſe may exceed a cup of cold water. And indeed God's Goodneſs is ſo Great, and his Treasures ſo Unexhausted, that as He is *forward* to recompence even the leaſt Services that can be done Him, ſo He is *able* to give the Greateſt a proportionable Reward. *Solomon* had an Opportunity, ſuch as never any Mortal had, (that we know of,) either before or ſince, of ſatisfying his Deſires, whether of Fame, or any other Thing that he could wiſh; *Ask what I ſhall give thee*, was the proffer made him by Him, that could give All things worth Receiving; and yet the Wiſdom even of *Solomon's* choice, approv'd by God Himſelf, conſiſted in declining the moſt ambition'd things of this Life, for thoſe things that might the better qualifie him to *ſerve and pleaſe God*. And to give you an example in a *Greater than Solomon*, we may conſider, that He *who being in the form of God, thought it not robbery to be equal with God*; and who

1 Kings
3j. 5.

Phil. ij. 6.

by

by leaving Heaven, did, to dwell on earth, quit more than any Inhabitant of the Earth can to gain Heaven, and deny'd more to become Capable of being temptred, than he did when he was temptred with an offer of *All the Kingdoms of the world, and the Glory of them*: This Saviour, I say, is said in Scripture to have, *for the joy that was set before him, endured the Cross, and despised the shame*; as if Heaven had been a sufficient Recompence for even *His Renouncing Honours, and Embracing Torments*.

Heb. xij.

2.

He that declines the Acquist of the Applause of men for the Contemplation of the Truths of God, does but forbear to gather that whilst 'tis immature, which by waiting God's time he will more seasonably gather when 'tis full ripe, and wholesome, and sweet. That *immarcescible Crown* (as St. Peter calls it) which the Gospel promises to them, *who by patient continuance in well doing seek for glory and honour*, will make a rich amends for the declining of a Fading Wreath here upon Earth, where Reputation is oftentimes as undeservedly acquir'd, as lost: Whereas in Heaven, the very
having

Rom.
ij. 7.

Matth. v.
II, 12,

having Celestial Honours argues a Title to them. And since 'tis our Saviour's Reasoning, That His Disciples ought to rejoyce when their Reputation is pursued by Calumny, as well as their Lives by Persecution, *because their reward is great in Heaven*, we may justly infer, That the Grounded Expectation of so illustrious a Condition may bring us more Content, even when 'tis not attended with a present Applause, than this Applause can give those who want that comfortable Expectation. So that, upon the whole matter, we have no reason to despond, or to complain of the Study of Theology, for but making Us decline an empty and transitory Fame for a solid and eternal Glory.

The

The Conclusion.

BY this time, Sir, I have said as much as I think *fit* (and therefore, I hope, more than upon your single account was *necessary*) to manifest, that *Physeophilus* had no just cause to undervalue the study of Divinity, nor our Friend the Doctor, for addicting himself to it. I hope you have not forgotten what I expressly enough declar'd. at the beginning of this Letter, That both your Friend and you admitting the holy Scriptures, I knew my self thereby to be warranted to draw Proofs from their Authority. And if I need not remind you of this, perhaps I need not tell you by way of Apology, that I am not so unacquainted with the Laws of Discourfing, but that, if I had been to argue with *Atheists* or *Scepticks*, I should have forborn to make use of divers of the Arguments I have imploy'd, as fetch'd from unconceded Topicks, and substituted others for such as yet I think it very allowable for me to urge, when I deal

with

with a Person, that, as your Friend does onely *undervalue the study* of the Scriptures, *not reject their Authority*. And if the prolixity I have been guilty of already did forbid me to increase it by Apologies not absolutely necessary, I should perchance rather think my self obliged to excuse the plainness of the Style of this Discourse; which both upon the Subject's score, and yours, may seem to challenge a richer Dress. But the matter is very serious, and you are a Philosopher, and when the things we treat of are highly important, I think Truths clearly made out to be the most persuasive pieces of Oratory. And a Discourse of this Nature is more likely to prove Effectual on Intelligent Perusers, by having the Reasons it presents perspicuously propos'd, and unprejudic'dly entertain'd, than by their being pathetically urg'd, or curiously adorn'd. And I have the rather forborn expressions that might seem more proper to *move* than to *convince*; because I foresee, I may very shortly have occasion to employ some of the former sort in another Letter to a Friend of yours and mine, who will, I doubt,

doubt, make you a sharer in the trouble of reading it. But writing this for you and *Physeophilus*, I was far more solicitous to give the Arguments I imploy a good temper, than a bright gloss. For even when we would excite Devotion, if it be in rational men, the most effectual pieces of Oratory are those, which like Burning-glasses inflame by nothing but numerous and united Beams of Light. If this Letter prove so happy as to give you *any* satisfaction, it will thereby bring me a *great* one. For prizing you as I do, I cannot but wish to see you Esteem those things now, which I am confident we shall always have cause to esteem; and then most, when the Light of Glory shall have made us better Judges of the true worth of things. And it would extremely trouble me to see you a Disesteemer of those Divine things, which as long as a man undervalues, the Possession of Heaven it self would not make him happy. And therefore, if the Blessing of Him whose Glory is aim'd at in it, make the Success of this Paper answerable to the Wishes, the Importance

(232)

rance of the Subject, will make the
Service done you by it suitable to the
Desires of,

SIR,

*Your most Faithful,
most Affectionate,
and most Humble
Servant.*

E I N I S.

INcl
P. 2
Theolo
ibid. 1
predc

ERRATA.

IN the *Introduction*, p. 2 l. 18. point thus; *else; our*.
p. 51. l. 17. r. *Corpuscularian*. p. 114. l. 3. r.
Theology for Philosophy. p. 133. l. 10. r. *yet many of*.
ibid. l. 19. r. *else do but*. p. 201. l. 12. point thus;
predecessors, did unanimously teach.

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ABOUT THE
EXCELLENCY
AND
GROUNDS

Of the
MECHANICAL HYPOTHESIS,
Some Considerations,
Occasionally propos'd to a Friend.

By T. H. R. B. E.

Fellow of the *Royal Society*.



LONDON,

Printed by T. N. for Henry Herringman, at the
Anchor in the Lower Walk of the New Exchange. 1674.

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The Publisher's
ADVERTISEMENT.

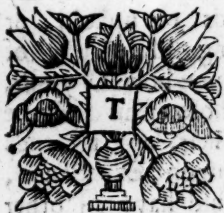
THe following Paper having been but occasionally and hastily pen'd, long after what the Author had written (by way of Dialogue) about the Requisites of a good Hypothesis, it was intended, that if it came forth at all, it should do so as an Appendix to that Discourse; because though one part of it does little more than name some of the Heads treated of in the Dialogue, yet, according to the exigency of the Occasion, the other part contains several things, either pretermitted, or but more lightly touched on in the Discourse. But, although the Author's design were to reserve these thoughts, as a kind of Paralipomena to his Dialogue; yet, since he is not willing to let that, at least quickly, come abroad, and these are fallen

into my hands; I will make bold, with
his good leave, to annex them to the
fore-going Treatise, not onely to com-
pleat the Bulk of the Book, but because
of some affinity between them, since
both aim at manifesting the Excel-
lency of the Studies they would recom-
mend. And perhaps 'twill not be un-
welcome to some of the Curious to find,
that our Noble Author in the same Book,
wherein he prefers the Study of Divine
things to that of Natural ones, does him-
self prefer the Mechanical Principles be-
fore all other Hypotheses about Natural
things, they being in their own Nature so
accommodate to make considering men
understand, rather than dispute of, the
Effects of Nature.

Of



Of the Excellency and Grounds
Of the
CORPUSCULAR
Or
MECHANICAL Philosophy.



He importance
of the Question,
you propose,
would oblige me
to refer you to
the *Dialogue a-*
bout a good

Hypothesis, and some other Papers of
that kind, where you may find my
thoughts about the advantages of the
Mechanical Hypothesis somewhat
amply set down, and discours'd of.
But, since your desires confine me to
deliver in few words, not what I be-
lieve resolvedly, but what I think
may be probably said for the Prefe-
rence or the Preeminence of the

Corpuscular Philosophy above *Aristotles*, or that of the *Chymists*, you must be content to receive from me, without any Preamble, or exact Method, or ample Discourses, or any other thing that may cost many words, a succinct mention of some of the chief Advantages of the *Hypothesis* we incline to. And I the rather comply, on this occasion, with your Curiosity, because I have often observ'd you to be alarm'd and disquieted, when you hear of any Book that pretends to uphold, or repair the decaying Philosophy of the Schools, or some bold *Chymist*, that arrogates to those of his Sect the Title of Philosophers, and pretends to build wholly upon Experience, to which he would have all other Naturalists thought strangers. That therefore you may not be so tempted to despond, by the Confidence or Reputation of those Writers, that do some of them applaud, and others censure, what, I fear, they do not understand, (as when the Peripateticks cry up, *Substantial Forms*, and the *Chymists*, *Mechanical Explications*) of Nature's *Phænomena*, I will propose

pose some Considerations, that, I hope, will not onely keep you kind to the Philosophy you have embrac'd, but perhaps, (by some Considerations which you have not yet met with,) make you think it probable, that the new Attempts you hear of from time to time, will not overthrow the *Corpuscularian Philosophy*, but either be foiled by it, or found reconcilable to it.

But when I speak of the *Corpuscular* or *Mechanical Philosophy*, I am far from meaning with the *Epicureans*, that *Atoms*, meeting together by chance in an infinite *Vacuum*, are able of themselves to produce the World, and all its Phenomena; nor with some Modern Philosophers, that, supposing God to have put into the whole Mass of Matter such an invariable quantity of Motion, he needed do no more to make the World, the material parts being able by their own unguided Motions, to cast themselves into such a System (as we call by that name); But I plead onely for such a Philosophy, as reaches but to things purely Corporeal, and distinguishing between

the first *original of things*, and the subsequent *course of Nature*, teaches, concerning the *former*, not onely that God gave Motion to Matter, but that in the beginning He so guided the various Motions of the parts of it, as to contrive them into the World he design'd they should compose, (furnish'd with the *Seminal Principles* and Structures or Models of Living Creatures,) and establish'd those *Rules of Motion*, and that order amongst things Corporeal, which we are wont to call the *Laws of Nature*. And having told this as to the *former*, it may be allowed as to the *latter* to teach, That the Universe being once fram'd by God, and the Laws of Motion being settled and all upheld by His incessant concurrence and general Providence; the Phenomena of the World thus constituted, are Physically produc'd by the Mechanical affections of the parts of Matter, and what they operate upon one another according to Mechanical Laws. And now having shewn what kind of *Corpuscular Philosophy* 'tis that I speak of I proceed to the particulars that I thought the most proper to recommend it.

I. The

I. The *first* thing that I shall mention to this purpose, is the Intelligibleness or Clearness of Mechanical Principles and Explications. I need not tell you, that among the *Peripateticks*, the Disputes are many and intricate about *Matter*, *Privation*, *Substantial Forms*, and their *Eduction*, &c. And the *Chymists* are sufficiently puzzled, (as I have elsewhere shewn,) to give such definitions and accounts of their Hypostatical Principles, as are reconcileable to one another, and even to some obvious *Phenomena*. And much more dark and intricate are their Doctrines about the *Archeus*, *Astral Beings*, *Gas*, *Blas*s, and other odd Notions, which perhaps have in part occasion'd the darkness and ambiguity of their expressions, that could not be very clear, when their Conceptions were far from being so. And if the Principles of the *Aristotelians* and *Spagyrist*s are thus obscure, 'tis not to be expected, the Explications that are made by the help onely of such Principles should be clear. And indeed many of them are either so general and slight, or otherwise so unsatisfactory, that granting

ing their Principles, 'tis very hard to understand or admit their applications of them to particular *Phænomena*. And even in some of the more ingenious and subtle of the *Peripatetick* Discourses upon their superficial and narrow Theories, me thinks, the Authors have better plaid the part of *Painters* than *Philosophers*, and have onely had the skill, like Drawers of Landskips, to make men fancy, they see Castles and Towns, and other Structures that appear solid and magnificent, and to reach to a large extent, when the whole Piece is superficial, and made up of Colours and Art, and compris'd within a Frame perhaps scarce a yard long. But to come now to the *Corpuscular* Philosophy, men do so easily understand one anothers meaning, when they talk of *Local Motion*, *Rest*, *Bigness*, *Shape*, *Order*, *Situation*, and *Contexture* of Material Substances; and these Principles do afford such clear accounts of those things, that are rightly deduc'd from them onely, that even those *Peripateticks* or *Chymists*, that maintain other Principles, acquiesce in the Explications made by these, when they

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can be had, and seek not any further, though perhaps the effect be so admirable, as would make it pass for that of a hidden Form, or Occult Quality. Those very *Aristotelians*, that believe the Celestial Bodies to be mov'd by Intelligences, have no recourse to any peculiar agency of theirs to account for *Eclipses*. And we laugh at those *East-Indians*, that, to this day, go out in multitudes, with some Instruments that may relieve the distressed Luminary, whose loss of Light they fancy to proceed from some fainting fit, out of which it must be rouz'd. For no Intelligent man, whether *Chymist* or *Peripatetic*, flies to his peculiar Principles, after he is informed, that the Moon is Eclipsed by the interposition of the Earth betwixt her and it, and the Sun by that of the Moon betwixt him and the Earth. And when we see the Image of a Man cast into the Air by a Concave Spherical Looking glass, though most men are amaz'd at it, and some suspect it to be no less than an effect of Witchcraft, yet he that is skill'd enough in *Catoptricks*, will, without consulting *Aristotle*, or *Paracelsus*,

racelus, or flying to Hypostatical Principles and Substantial Forms, be satisfied, that the *Phænomenon* is produc'd by the beams of Light reflected, and thereby made convergent according to Optical, and consequently Mathematical Laws.

But I must not now repeat what I elsewhere say, to shew, that the Corpuscular Principles have been declin'd by Philosophers of different Sects, not because they think not our Explications clear, if not much more so, than their own; but because they imagine, that the applications of them can be made but to few things, and consequently are insufficient.

II. In the next place I observe, that there cannot be *fewer* Principles than the two grand ones of Mechanical Philosophy, *Matter* and *Motion*. For, Matter alone, unless it be moved, is altogether unactive; and whilst all the parts of a Body continue in one state without any Motion at all, that Body will not exercise any action, nor suffer any alteration it self, though it may perhaps modify the action of other Bodies that move against it.

III. Nor can we conceive any Principles

ciples more *primary*, than *Matter* and *Motion*. For, either both of them were immediately created by God, or, (to add that for their sakes that would have *Matter* to be unproduc'd,) if *Matter* be eternal, *Motion* must either be produc'd by some Immaterial Supernatural Agent; or it must immediately flow by way of Emanation from the nature of the matter it appertains to.

IV. Neither can there be any Physical Principles more *simple* than *Matter* and *Motion*; neither of them being resolvable into any things, whereof it may be truly, or so much as tolerably, said to be compounded.

V. The next thing I shall name to recommend the Corpuscular Principle, is their great Comprehensiveness. I consider then, that the genuine and necessary effect of the sufficiently strong Motion of one part of *Matter* against another, is, *either* to drive it on in its intire bulk, *or* else to break or divide it into particles of determinate *Motion*, *Figure*, *Size*, *Posture*, *Rest*, *Order*, or *Texture*. The two first of these, for *instance*, are each of them capable of numerous varieties. For
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the *Figure* of a portion of Matter may either be one of the five Regular Figures treated of by Geometricians, or some determinate *Species* of Solid Figures, as that of a *Cone*, *Cylinder*, &c. or Irregular, though not perhaps Anonymous, as the Grains of Sand, Hoops, Feathers, Branches, Forks, Files, &c. And as the *Figure*, so the *Motion* of one of these particles may be exceedingly diversified, not only by the determination to this or that part of the world, but by several other things, as particularly by the almost infinitely varying degrees of Celerity, by the manner of its progression with, or without, Rotation, and other modifying Circumstances; and more yet by the Line wherein it moves, as (besides Streight) Circular, Elliptical, Parabolical, Hyperbolical, Spiral, and I know not how many others. For, as later Geometricians have shewn, that those crooked Lines may be compounded of several Motions, (that is, trac'd by a Body whose motion is mixt of, and results from, two or more simpler Motions,) so how many more curves may, or rather may not be made by new Compositions

sitions and Decompositions of Motion, is no easie task to determine.

Now, since a *single* particle of Matter, by vertue of two onely of the Mechanical affections, that belong to it, be diversifiable so many ways; how vast a number of variations may we suppose capable of being produc'd by the Compositions and Decompositions of *Myriads* of single invisible Corpuscles, that may be contained and contex'd in one small Body, and each of them be imbued with more than two or three of the fertile Catholick Principles above mention'd: Especially since the aggregate of those Corpuscles may be farther diversifi'd by the *Texture* resulting from their Convention into a Body, which, as so made up, has its own Bigness, and Shape, and Pores, (perhaps very many, and various) and has also many capacities of acting and suffering upon the score of the place it holds among other Bodies in a World constituted as ours is: So that, when I consider the almost innumerable diversifications, that Compositions and Decompositions may make of a small number, not perhaps

perhaps exceeding twenty of distinct things, I am apt to look upon those, who think the Mechanical Principles may serve indeed to give an account of the *Phænomena* of this or that particular part of Natural Philosophy, as *Statics*, *Hydrostatics*, the *Theory of the Planetary Motions*, &c. But can never be applied to all the *Phænomena* of things Corporeal. I am apt, I say, to look upon those, otherwise Learned, men, as I would do upon him, that should affirm, that by putting together the Letters of the *Alphabet*, one may indeed make up all the words to be found in one Book, as in *Euclid*, or *Virgil*, or in one Language, as *Latine*, or *English*; but that they can by no means suffice to supply words to all the Books of a great Library, much less to all the Languages in the world.

And whereas there is another sort of Philosophers, that, observing the great efficacy of the bigness, and shape, and situation, and motion, and connexion in Engines, are willing to allow, that those Mechanical Principles may have a great stroke in the Operations of Bodies of a sensible bulk,

bulk, and manifest Mechanism, and therefore may be usefully imploy'd in accounting for the effects and Phænomena of such Bodies, who yet will not admit, that these Principles can be apply'd to the hidden Transactions that pass among the minute Particles of Bodies; and therefore think it necessary to refer these to what they call *Nature, Substantial Forms, Real Qualities*, and the like Un-mechanical Principles and Agents.

But this is not necessary; for, both the Mechanical affections of Matter are to be found, and the Laws of Motion take place, not onely in the great Masses, and the middle-siz'd Lumps, but in the smallest Fragments of Matter; and a lesser portion of it, being as well a Body as a greater, must, as necessarily as it, have its determinate Bulk and Figure: And he that looks upon Sand in a good Microscope, will easily perceive, that each minute Grain of it has as well its own size and shape, as a Rock or Mountain. And when we let fall a great stone and a pibble from the top of a high Building, we find not but that the latter as well as the former moves con-

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formably

formably to the Laws of acceleration in heavy Bodies descending. And the Rules of Motion are observ'd, not onely in Canon Bullets, but in Small Shot; and the one strikes down a Bird according to the same Laws, that the other battereth down a Wall. And though *Nature* (or rather its Divine Author) be wont to work with much finer materials, and employ more curious contrivances than *Art*, (whence the Structure even of the rarest Watch is incomparably inferior to that of a Humane Body;) yet an Artist himself, according to the quantity of the matter he employs, the exigency of the design he undertakes, and the bigness and shape of the Instruments he makes use of, is able to make pieces of work of the same nature or kind of extremely differing bulk, where yet the like, though not equal, Art and Contrivance, and oftentimes Motion too, may be observ'd: As a Smith, who with a Hammer, and other large Instruments, can, out of masses of Iron, forge great Bars or Wedges, and make those strong and heavy Chains that were employ'd to load Malefactors,

factors, and even to secure Streets and Gates, may, with lesser Instruments, make smaller Nails and Filings, almost as minute as Dust; and may yet, with finer Tools, make Links of a strange Slenderneſs and Lightneſs; inſomuch that good Authors tell us of a Chain of divers Links that was faſtned to a Plea, and could be mov'd by it; and, if I mis-remember not, I ſaw ſomething like this, beſides other Inſtances that I beheld with pleaſure of the Littleneſs that Art can give to ſuch pieces of Work, as are uſually made of a conſiderable bigneſs. And therefore to ſay, that, though in Natural Bodies, whoſe bulk is manifeſt and their ſtructure viſible, the Mechanical Principles may be uſefully admitted, that are not to be extended to ſuch portions of Matter, whoſe parts and Texture are inviſible; may perhaps look to ſome, as if a man ſhould allow, that the Laws of Mechanism may take place in a Town-Clock; but cannot in a Pocket-Watch; or (to give you an inſtance, mixt of Natural and Artificial,) as if, becauſe the Terraqueous Globe is a vaſt Magnetical Body of

seven or eight thousand miles in Diameter, one should affirm, that Magnetical Laws are not to be expected to be of force in a spherical piece of Loadstone that is not perhaps an inch long; And yet Experience shews us, that notwithstanding the inestimable disproportion betwixt these two Globes, the *Terrella*, as well as the *Earth*, hath its Poles, *Æquator*, and Meridians, and in divers other Magnetical Properties, emulates the Terrestrial Globe.

They that, to solve the *Phænomena* of Nature, have recourse to Agents which, though they involve no self-repugnancy in their very Notions, as many of the Judicious think *Substantial Forms* and *Real Qualities* to do, yet are such that we conceive not, how they operate to bring effects to pass: These, I say, when they tell us of such indeterminate Agents, as the *Soul of the World*, the *Universal Spirit*, the *Plastic Power*, and the likes, though they may in certain cases tell us some things, yet they tell us nothing that will satisfy the Curiosity of an Inquisitive Person, who seeks not so much to know, what is the
general

general Agent, that produces a *Phenomenon*; as, by *what Means*, and after *what Manner*, the *Phenomenon* is produc'd. The famous *Sennerius*, and some other Learned Physicians, tell us of Diseases which proceed from Incantation; but sure 'tis but a very slight account, that a sober Physician, that comes to visit a Patient reported to be bewitch'd, receives of the strange Symptoms he meets with, and would have an account of, if he be coldly answer'd, That 'tis a Witch or the Devil that produces them; and he will never sit down with so short an account, if he can by any means reduce those extravagant Symptoms to any more known and stated Diseases, as *Epilepsies*, *Convulsions*, *Hysterical Fits*, &c. and, if he can not, he will confess his knowledge of this Distemper to come far short of what might be expected and attain'd in other Diseases, wherein he thinks himself bound to search into the Nature of the Morbific Matter, and will not be satisfi'd till he can, probably at least, deduce from that, and the structure of an Humane Body, and other concurring Physical

Causes, the *Phænomena* of the Ma-
 lady. And it would be but little sa-
 tisfaction to one, that desires to un-
 derstand the causes of what occurs to
 observation in a Watch, and how it
 comes to point at, and strike, the
 hours, to be told, That 'twas such a
 Watch-maker that so contriv'd it.
 Or to him that would know the true
 cause of an *Eccho*, to be answer'd,
 That 'tis a Man, a Vault, or a Wood
 that makes it.

And now at length I come to con-
 sider that which I observe the most
 to alienate other Sects from the Me-
 chanical Philosophy; namely, that
 they think it pretends to have Prin-
 ciples so Universal and so Mathema-
 tical, that no other Physical Hypo-
 thesis can comport with it, or be to-
 lerated by it.

But this I look upon as an easie
 indeed, but an important, mistake,
 because by this very thing, that the
 Mechanical Principles are so univer-
 sal, and therefore applicable to so
 many things, they are rather fitted
 to *include*, than necessitated to *ex-
 clude*, any other Hypothesis that is
 founded in Nature, as far as it is so.

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And such *Hypotheses*, if prudently consider'd by a skilful and moderate person, who is rather dispos'd to unite *Seets* than multiply them, will be found, as far as they have Truth in them, to be either Legitimately, (though perhaps not immediately) deducible from the Mechanical Principles, or fairly reconcilable to them. For, such *Hypotheses* will probably attempt to account for the *Phænomena* of Nature, either by the help of a determinate number of material Ingredients, such as the *Tria Prima* of the Chymists, by participation whereof other Bodies obtain their Qualities; or else by introducing some general Agents, as the *Platonic Soul of the World*, or the *Universal Spirit*, affected by some Spagyrists; or by both these ways together.

Now to dispatch first those, that I named in the second place, I consider, that the chief thing, that Inquisitive Naturalists should look after in the explicating of difficult *Phænomena*, is not so much what the Agent is or does, as, what changes are made in the Patient, to bring it to exhibit the *Phænomena* that are propos'd, and by

what means, and after what manner, those changes are effected. So that the *Mechanical* Philosopher being satisfied, that one part of Matter can act upon another but by vertue of Local Motion, or the effects and consequences of Local Motion, he considers, that *as*, if the propos'd Agent be not Intelligible and Physical, it can never Physically explain the *Phænomena*; so, if it be Intelligible and Physical, 'twill be reducible to *Matter*, and some or other of those onely Catholick affections of Matter, already often mentioned. And, the indefinite divisibility of Matter, the wonderful efficacy of Motion, and the almost infinite variety of Coalitions and Structures, that may be made of minute and insensible Corpuscles, being duly weighed, I see not why a Philosopher should think it impossible, to make out by their help the Mechanical possibility of any corporeal Agent, how subtil, or diffus'd, or active soever it be, that can be solidly proved to be really existent in Nature, by what name soever it be call'd or disguis'd. And though the *Cartesians* be Mechanical Philosophers

phers, yet, according to them, their *Materia Subtilis*, which the very name declares to be a corporeal Substance, is, for ought I know, little (if it be at all) less diffus'd through the Universe, or less active in it than the Universal Spirit of some Spagyrist, not to say, the *Anima Mundi* of the Platonists. But this upon the by; after which I proceed, and shall venture to add, That whatever be the Physical Agent, whether it be inanimate or living, purely Corporeal, or united to an Intellectual Substance, the above mention'd changes, that are wrought in the Body that is made to exhibit the Phenomena, may be effected by the same or the like means, or after the same or the like manner; as, *for instance*, if Corn be reduc'd to Meal, the Materials and shape of the Mill-stones, and their peculiar Motion and Adaptation, will be much of the same kind, and (though they should not, yet) to be sure the grains of Corn will suffer a various contrition and comminution in their passage to the form of Meal; whether the Corn be ground by a Water-mill, or a Wind-mill, or a Horse-mill, or a Hand-

Hand-mill; that is, by a Mill whose Stones are turned by Inanimate, by Brute, or by Rational, Agents. And, if an Angel himself should work a real change in the nature of a Body, 'tis scarce conceivable to us Men, how he could do it without the assistance of Local Motion; since, if nothing were displac'd or otherwise mov'd than before, (the like happening also to all external Bodies to which is related,) 'tis hardly conceivable, how it should be in it self other, than just what it was before.

But to come now to the other sort of Hypotheses formerly mention'd, if the *Chymists*, or others that would deduce a compleat Natural Philosophy from *Salt, Sulphur, and Mercury*, or any other set number of Ingredients of things, would well consider what they undertake, they might easily discover, *That* the material parts of Bodies, as such, can reach but to a small part of the *Phanomena* of Nature, whilst these Ingredients are consider'd but as Quiescent things, and therefore they would find themselves necessitated to suppose them to be active; and *That* things purely Corporeal

poreal cannot be but by means of Local Motion, and the effects that may result from that, accompanying variously shaped, fix'd, and aggregated parts of Matter: So that the Chymists and other Materialists, (if I may so call them,) must (as indeed they are wont to do) leave the greatest part of the *Phænomena* of the Universe unexplicated by the help of the Ingredients, (be they fewer or more than three,) of Bodies, without taking in the Mechanical and more comprehensive affections of Matter, especially Local Motion. I willingly grant, that Salt, Sulphur, and Mercury, or some Substances analogous to them, are to be obtain'd by the action of the Fire, from a very great many dissipable Bodies here below; nor would I deny, that, in explicating divers of the *Phænomena* of such Bodies, it may be of use to a skilful Naturalist to know and consider, that this or that Ingredient, as Sulphur, for instance, does abound in the Body propos'd, whence it may be probably argu'd, that the Qualities, that usually accompany that Principle when Predominant, may be also, upon its score, found

found in the Body that so plentifully partakes of it. But not to mention, what I have elsewhere shown, that there are many *Phænomena*, to whose explication this knowledge will contribute very little or nothing at all; I shall only here observe, that, though Chymical Explications be sometimes the most obvious and ready, yet they are not the most fundamental and satisfactory: For, the Chymical Ingredient it self, whether Sulphur or any other, must owe its nature and other qualities to the union of insensible particles in a convenient Size, Shape, Motion or Rest, and Contexture; all which are but Mechanical Affections of convening Corpuscles. And this may be illustrated by what happens in Artificial Fire-works. For, though in most of those many differing sorts that are made either for the use of War, or for Recreation, Gunpowder be a main Ingredient, and divers of the *Phænomena* may be deriv'd from the greater or lesser measure, wherein the Compositions partake of it; yet, besides that there may be Fire-works made without Gun-powder, (as appears by those
made

made of old by the *Greeks* and *Romans*;) Gun-powder it self owes its aptness to be fir'd and exploded to the Mechanical Contexture of more simple portions of Matter; *Nitre*, *Charcoal*, and *Sulphur*; and Sulphur it self, though it be by many Chymists mistaken for an Hypostatical Principle, owes its Inflammability to the convention of yet more simple and primary Corpuscles; since Chymists confess, that it has an inflammable Ingredient, and experience shews, that it very much abounds with an acid and unflammable Salt, and is not quite devoid of Terrestreity. I know, it may be here alledg'd, that the productions of Chymical Analyses are simple Bodies, and upon that account irresoluble. But, that divers Substances, which Chymists are pleased to call the *Salts*, or *Sulphurs*, or *Mercuries* of the Bodies that afforded them, are not simple and homogeneous, has elsewhere been sufficiently proved; nor is their not being easily dissipable or resolvable a clear proof of their not being made up of more primitive portions of matter. For, compounded and even decomposed

Bodies

Bodies may be as difficultly resolvable, as most of those that Chymists obtain by what they call their *Analysis* by the Fire: witness common green Glass, which is far more durable and indissoluble than many of those that pass for Hypostatical Substances. And worse, that some *Minerals* will be several times even vitrified in the Fire, without losing their Nature, or often times so much as their colour; and yet *Steel* is manifestly not only a compounded, but a decomposed Body, consisting of Salt and Powder of Pebbles or Sand, and calcin'd Iron, and if like *Steel* be not white, usually of some tinging Metall or Mineral. But how indissoluble soever the Chymical Principles be supposed, kinds of the Operations, ascrib'd to them will never be well made out, without the help of Local Motion, (and a hat diversified too;) without which, we can little better give an account of the *Phænomena* of many Bodies, by knowing what Ingredients compose them, than we can explain the Operations of a Watch, by knowing of how many and of what Metalls the Balance, the Wheels, the Chain, and other parts

parts, are made; or that we can de-
 rive the Operations of a Wind-mill
 from the bare knowledge, that 'tis
 made up of Wood, and Stone, and
 Canvas, and Iron. And here let me
 add, that 'twould not at all overthrow
 the Corpuscularian Hypothesis,
 though either by more exquisite Pu-
 rifications, or by some other Operati-
 ons than the usual *Analysis* of the
 Fire, it should be made appear, that
 the Material Principles or Elements
 of mixt Bodies should not be the *Tria*
Prima of the vulgar Chymists, but
 either Substances of another nature,
 or else fewer, or more in number; as
 would be, if that were true; which
 some Spagyrist affirm, (but I could
 never find,) that from all sorts of
 mixt Bodies, five, and but five, differ-
 ing similar Substances can be separa-
 ted: Or, as if it were true, that the
Helmontians had such a resolving Men-
 struum as the *Alkahest* of their Master,
 by which he affirms, that he could
 reduce Stones into Salt of the same
 weight with the Mineral, and bring
 both that Salt and all other kind of
 mixt and tangible Bodies into insipid
 Water. For, what ever be the num-
 ber

number or qualities of the Chymical Principles, if they be really existent in Nature, it may very possibly be shewn, that they may be made up of insensible Corpuscles of determinate bulks and shapes; and by the various Coalitions and Contextures of such Corpuscles, *not only* three or five, *but* many more material Ingredients, may be compos'd or made to result: But, though the *Alkabeftical* Reductions newly mention'd should be admitted, yet the Mechanical Principles might well be accommodated even to them. For, the Solidity, Taste, &c. of Salt, may be fairly accounted for, by the Stiffness, Sharpness, and other Mechanical Affections of the minute Particles, whereof Salts consist; and if, by a farther action of the *Alkabeft*, the Salt or any other solid Body, be reduc'd into insipid Water, this also may be explicated by the same Principles, supposing a further Commixtion of the parts, and such an attrition, as wears off the edges and points that inabled them to strike briskly the Organ of Taste: For, as to Fluidity and Firmness, those mainly depend upon two of our grand Principles,

ciples, *Motion* and *Rest*. And I have
 else where shewn, by several proofs,
 that the Agitation or Rest, and the
 looser contact, or closer cohesi^{on}, of
 the particles, is able to make the
 same portion of Matter, at one time a
 firm, and at another time, a fluid Body.
 So that, though the further Sagacity
 and Industry of Chymists (which I
 would by no means discourage) should
 be able to obtain from mixt Bodies
 homogeneous substances differing in
 number, or nature, or both, from their
 vulgar Salt, Sulphur, and Mercury;
 yet the Corpuscular Philosophy is so
general and fertile, as to be fairly re-
 concilable to such a Discovery; and
 also so *useful*, that these new material
 Principles will, as well as the old *Tria*
Prima, stand in need of the more Ca-
 tholick Principles of the *Corpuscula-*
rius, especially Local Motion. And
 indeed, what ever Elements or Ingre-
 dients men have (that I know of)
 pitched upon, yet if they take not in
 the Mechanical Affections of Matter,
 their Principles have been so deficient,
 that I have usually observ'd, that the
 Materialists, without at all excepting
 the Chymists, do not only, as I was
 C saying,

saying I leave many things unex-
 plain'd, to which their narrow Prin-
 ciples will not extend; but, even in
 the particulars they presume to give
 an account of, they either content
 themselves, to assign such common
 and indefinite Causes, as are too ge-
 neral to signifie much towards an in-
 sufficient mans satisfaction; or if they
 venture to give particular Causes,
 they assign precarious or false ones,
 and liable to be easily disprov'd by
 Circumstances, or Instances, whereto
 their Doctrine will not agree, as I
 have often elsewhere had occasion to
 shew. And yet the Chymists need
 not be frighted from acknowledging
 the Prerogative of the Mechanical
 Philosophy, since that may be re-
 conciliable with the Truth of their
 own Principles, as far as these agree
 with the *Phanomena* they are apply'd
 to. For these more confin'd *Hypotheses*
 may be subordinated to those more
 general and fertile Principles, and
 there can be no Ingredient assign'd,
 that has a real existence in Nature,
 that may not be deriv'd either imme-
 diately, or by a row of Decomposi-
 tions, from the Universal Matter, mo-

diff'd by its Mechanical Affections:
 For, if with the same Bricks, diversly
 put together and rang'd, several
 Walls, Houses, Furnaces, and other
 Structures, as Vaults, Bridges, Pyra-
 mids, &c. may be built, meere by a
 various contrivement of parts of the
 same kind; how much more may
 great variety of Ingredients be pro-
 duc'd by, or, according to the insti-
 tution of Nature; result from, the va-
 rious coalitions and contextures of
 Corpuscles, that need not be sup-
 pos'd, like Bricks, all of the same, or
 near the same, size and shape, but may
 have amongst them, both of the one
 and the other, as great a variety as
 need be wish'd for, and indeed a great-
 er than can easily be so much as
 imagin'd. And the primary and mi-
 nute Concretions that belong to these
 Ingredients, may, without Oppositi-
 on from the Mechanical Philosophy,
 be suppos'd to have their particles so
 minute and strongly coherent, that
 Nature of her self does scarce ever
 tear them asunder; as we see, that *Mer-
 cury* and *Gold* may be successively
 made to put on a multitude of dis-
 guises, and yet to retain their nature,

as to be reducible to their pristine forms. And you know, I lately told you, that common Glass and good Amels, though both of them but fictitious Bodies, and not onely mix'd, but compounded Concretions, have yet their component parts so strictly united by the skill of illiterate Tradesmen, as to maintain their union in the vitrifying violence of the Fire. Nor do we find, that common Glass will be wrought upon by *Aqua fortis*, or *Aqua Regia*, though the former of them will dissolve *Mercury*, and the later *Gold*.

From the fore-going Discourse it may (probably at least) result, That if, besides Rational Souls, there are any Immaterial Substances (such as the Heavenly Intelligences, and the Substantial Forms of the *Aristotelians*) that regularly are to be numbered among Natural Agents, their way of working being unknown to us, they can but help to constitute and effect things, but will very little help us to conceive *how* things are effected; so that, by what ever Principles Natural things be constituted, 'tis by the Mechanical Principles that their *Phæ-*

namena must be clearly explicated. As for instance, though we should grant the *Aristotelians*, that the Planets are made of a quintessential matter, and moved by Angels, or Immaterial Intelligences; yet, to explain the Stations, Progressions, and Retrogradations, and other *Phænomena* of the Planets, we must have recourse either to Eccentrics, Epicycles, &c. or to motions made in Elliptical or other peculiar Lines; and, in a word, to Theories, wherein the Motion, and Figure, Scituation, and other Mathematical or Mechanical Affections of Bodies are mainly employ'd. But if the Principles propos'd be corporeal things, they will be then fairly Reducible, or Reconcilable, to the Mechanical Principles; these being so general and pregnant, that, among things corporeal, there is nothing *real*, (and I meddle not with *Chymical* Beings, such as some of *Paracelsus's*,) that may not be deriv'd from, or be brought to, a subordination to such comprehensive Principles. And when the Chymists shall shew, that mix'd Bodies owe their qualities to the predominancy of this or that of their

three grand Ingredients, the *Corpuscularians* will shew, that the very Qualities of this or that Ingredient flow from its peculiar Texture, and the Mechanical affections of the Corpuscles it is made up of. And to affirm, that, because the Furnaces of Chymists afford a great number of uncommon Productions and Phenomena, there are Bodies or Operations amongst things purely Corporal, that cannot be derived from, or reconcild to, the comprehensive and pregnant Principles of the Mechanical Philosophy, is, as if, because there are a great number and variety of Anthems, Hymns, Pavns, Threnodies, Courants, Gavots, Branles, Sarabands, Jigs, and other (grave and sprightly) Tunes to be met with in the Books and Practices of Musicians, one should maintain, that there are in them a great many Tunes, or at least Notes, that have no dependence on the Scale of Music; or, as if, because, besides Rhombusses, Rhomboids, Trapeziums, Squares, Pentagons, *Chiliagons*, *Myriagons*, and innumerable other *Polygons*, Regular and Irregular, one should presume to affirm, that there are among them

them some Rectilinear Figures, that
 are not reducible to Triangles, or have
 Affections that will overthrow what
 Euclid has taught of *Irregular*
Polygons. I mistake I know not.
 To what has been said, I shall add
 but one thing more; That, ac-
 cording to what I formerly intimated,
 Mechanical Principles and Explana-
 tions are for their cleanness, preferred
 even by Materialists themselves, to
 others in the cases where they can be
 had; so, the Sagacity and Industry of
 modern Naturalists and Mathematici-
 ans, having happily applied them
 in several of those difficult *Phænomena*
 as in *Hydrostatics*, as the present
 place of *Opticks*, *Gunnery*, &c. in the
 before where they might be referred to
 doubtful Qualities; it is probable, that
 when this Philosophy is deeper
 searched into, and farther improved,
 it will be found applicable to the so-
 lution of more and more of the *Phæ-
 nomena* of Nature. And on this occa-
 sion let me observe, that it is not
 always necessary, though it be always
 desirable, either to propound an
Hypothesis in Astronomy, Chymistry,
 Anatomy, or other parts of Physics,

"O Oeds
 and yea-
 phetse,

be able, *à priori*, to prove his *Hypothesis* to be true, or demonstratively to shew, that the other *Hypotheses* propos'd about the same subject must be false. For *as*, if I mistake not, *Plato* said, That the World was God's Epistle written to Mankind, & might have added, consonantly to another saying of his, 'twas written in Mathematical Letters: *So*, in the Physical Explications of the Parts and System of the World, me thinks, there is somewhat like what happens, when men conjecturally frame several Keys to enable us to understand a Letter written in Cyphers. For, though one man by his sagacity have found out the right Key, it will be very difficult for him, *either* to prove otherwise than by trial, that this or that word is not such as 'tis guess'd to be by others according to their Keys; or to *evince*, *à priori*, that theirs are to be rejected, and his to be preferr'd; yet, if due trial being made, the Key he proposes, shall be found so agreeable to the Characters of the Letter, as to enable one to understand them, and make a coherent sense of them, its suitableness to what it should decipher,

cyph
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cipher, is, without either confutations,
 or extraneous positive proofs, suffici-
 ent to make it be accepted as the
 right Key of that Cypher. And so,
 in Physical *Hypotheses*, there are some,
 that, without noise, or falling foul
 upon others, peaceably obtain dis-
 cerning mens approbation only by
 their fitness to solve the *Phenomena*,
 for which they were devis'd, without
 crossing any known Observation or
 Law of Nature. And therefore, if the
 Mechanical Philosophy go on to ex-
 plicate things Corporeal at the rate
 it has of late years proceeded at, 'tis
 scarce to be doubted, but that in
 time unprejudic'd persons will think
 it sufficiently recommended by its
 consistency with it self, and its ap-
 plicableness to so many *Phenomena*
 of Nature:

A

A Recapitulation.

PErceiving, upon a review, of the foregoing Paper, that the difficulty and importance of the Subject has seduc'd me to spend many more words about it than I at first design'd, it will not now be amiss to give you this short Summary of what came into my mind to recommend to you the *Mechanical Philosophy*, and to obviate your fears of seeing it supplanted; having first premis'd once for all, that presupposing the Creation and general Providence of God, I pretend to treat but of things *Corporeal*, and add abstract in this Paper from *Immaterial Beings*, (which otherwise I very willingly admit,) and all Agents and Operations Miraculous or Supernatural.

I. Of the Principles of things Corporeal, none can be more *few*, without being insufficient, or more *primary* than *Matter* and *Motion*.

II. The natural and genuine effect of variously determin'd *Motion* in portions

tions of *Matter*, is, to divide it into parts of differing sizes, and shapes, and to put them into different Motions, and the Consequences, that flow from these, in a World fram'd as ours is, as to the separate fragments, posture, order, and situation, and as to the Conventions of many of them, peculiar Compositions and Contextures.

III. The parts of *Matter* endow'd with these Catholick affections are by various associations reduc'd to Natural Bodies of several kinds, according to the plenty of the *Matter*, and the various Compositions and Decompositions of the Principles, which I suppose the common *Matter* they diversifie. And these several kinds of Bodies, by vertue of their Motion, Rest, and other Mechanical Affections, which fit them to act on, and suffer from, one another, become indow'd with several kinds of Qualities, (whereof some are call'd Manifest, and some Occult,) and those that act upon the peculiarly fram'd Organs of Sense, whose Perceptions by the Animadversive faculty of the Soul are Sensations.

IV. These Principles, *Matter*, *Motion*,

ion, (to which *Rest* is related) *Rig-
ness, Shape, Posture, Order, Texture*
 being so simple, clear, and *comprehen-
sive*, are applicable to all the real *Pha-
nomena* of Nature, which seem not
 explicable by any other not consistent
 with ours. For, if recourse be had to
 an Immaterial Principle or Agent, it
 may be such an one, as is not intelli-
 gible; and however it will not enable
 us to *explain* the *Phenomena*, because
 its way of working upon things Ma-
 terial would probably be more diffi-
 cult to be Physically made out, than
 a Mechanical account of the *Pheno-
mena*. And, notwithstanding the Im-
 materiality of a *created* Agent, we
 cannot conceive, how it should pro-
 duce changes in a Body, without the
 help of Mechanical Principles, espe-
 cially *Local Motion*; and accordingly
 we find not, that the Reasonable Soul
 in Man is able to produce what
 changes it pleases in the Body, but
 is confin'd to such, as it may produce
 by determining or guiding the Mo-
 tions of the Spirits, and other parts of
 the Body, subservient to voluntary
 Motion.

V. And if the Agents or active
 Princi-

Principles resorted to, be not Imma-
 terial, but of a Corporeal Nature, they
 must *either* in effect be the same with
 the Corporeal Principles above-nam'd;
 or, because of the great Universality &
 Simplicity of ours, the new ones pro-
 pos'd must be less general than *they*,
 and consequently capable of being sub-
 ordinated or reduc'd to *ours*, which by
 various Compositions may afford mat-
 ter to several Hypotheses, and by
 several Coalitions afford minute Con-
 cretions exceedingly numerous and du-
 rable, and consequently fit to become
 the Elementary Ingredients of more
 compounded Bodies, being in most
 Trials Similar, and as it were the Ra-
 dical parts, which may, after several
 manners, be diversified; as in *Latin*,
 the Themes are by Prepositions, Ter-
 minations, &c. and in *Hebrew*, the
 Roots by the Hæmantic Letters: So
 that the fear, that so much of a *New*
 Physical Hypothesis, as is *true*, will
 overthrow or make useless the Mecha-
 nical Principles, is, as if one should fear,
 that there will be a Language pro-
 pos'd, that is discordant from, or not re-
 ducible to, the Letters of the Alphabet.

F I N I S.